

Appendix B

Comment Letters

Reid 8/21/06 74



US Army Corps of Engineers
PO Box 3755
Seattle, WA 98124-3755

RE: Us Army Corps Of Engineers, Seattle District Fiscal Years 2007 Through 2011
Maintenance Dredging And Disposal, Grays Harbor And Chehalis River Federal
Navigation Project, Washington

LETTER OF SUPPORT

ATTN: Hiram Arden (OD-TS-NS)

Grays Harbor Chamber of Commerce is responding to the Navigation Section Notice
Date: July 28, 2006; Reference: CENWS-OD-TS-NS-25.

We are pleased that the U.S. Army Corps of Engineers, Seattle District
(Corps) plans to continue routine dredging and disposal activities associated with
maintenance of the Grays Harbor and Chehalis River Federal navigation channel. The
continuation and deepening of that channel is more important today, than for many years.

We are pleased to see a growing increase of shipping traffic utilizing this deep draft
channel.

The Grays Harbor Chamber of Commerce strongly supports the project. Our support is
because of our strong agreement with your "Purpose and Project Objective statement:
"The Port of Grays Harbor utilizes the Federally authorized navigation channel to provide
seagoing vessels with commercial access to the cities of Aberdeen, Hoquiam, and
Cosmopolis. Without annual maintenance dredging, shoaling would lead to a shallower
channel that would reduce the ability of large ships to enter and leave Grays Harbor
safely. The purpose of channel maintenance dredging is to maintain the efficiency and
safety of deep-draft water transportation in Grays Harbor."

Please place our letter of support on the record.

Sincerely,

LeRoy Tipton, President
Grays Harbor Chamber of Commerce



506 DUFFY STREET • ABERDEEN, WASHINGTON 98520 • (360) 532-1924 • FAX (360) 533-7945

E-mail: info@graysharbor.org • Web Site: www.graysharborchamber.biz

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LETTERS, KIRK

Reid 8/21/06 ★

August 21, 2006

Hiram T. Arden
Project Manager
Navigation Section

This is a statement in strong support of the continued Maintenance Dredging of Grays Harbor and the Chehalis River. It is imperative that this operation be continued in order to provide an adequate and safe navigational channel for foreign and domestic commercial vessels calling at the port. Tank vessels, carrying petroleum products to and from the Port of Grays Harbor, must have sufficient channel width, depth and under-keel clearance to mitigate the chances of an environmental mishap during the transit under any tidal conditions.

In addition, the port has demonstrated the ability to accommodate large government vessels for the movement of personnel and equipment for natural disasters, and for national security. It is in the best interest of, not only the Port of Grays Harbor, but also for the economy of the surrounding communities, and the security of the United States to maintain the navigational channel to the port facilities at an adequate and safe depth for 24 hour access.

Grays Harbor is a very unique port. It is the only coastal port in the state of Washington, providing a deep channel for ocean going vessels, and direct and immediate access to both highway and rail facilities for the overland delivery and receipt of a wide variety of commodities. With escalating energy costs, and the closest proximity to Pacific Rim shipping routes, Grays Harbor is in an excellent position to attract new and expanded shipping business - provided the 24 hour access to port facilities is maintained as presently proposed by the U.S. Army Corps of Engineers.

I strongly urge all parties concerned to support the crucial Maintenance Dredging of the Grays Harbor and Chehalis River Federal Navigation Project.

Captain Stephen G. Cooke
Bar and Docking Pilot
Grays Harbor

Page 2 of 2

(360) 581-4355 (Cell)
(253) 858-3778 (Home)
captcooke@comcast.net

CFL ERS, Kinney

Reid 8/21/06 *RF*

**ILWU LOCAL #24
3105 JOHN STEVENS WAY
HOQUIAM, WA. 98550
1-360-533-3412 OR FAX 1-360-533-1406**

8-17-2006

TO HIRAM T. ARDEN:

WE AT THE INTERNATIONAL LONGSHORE AND WAREHOUSE UNION #24 ARE UNANIMOUSLY SUPPORTIVE OF THE CURRENT AND FUTURE CORPS PLANS FOR DREDGING OF GRAYS HARBOR. ALL FACETS OF PAST, PRESENT, AND FUTURE CHANNEL MAINTENANCE CONTRIBUTE TO A DEPENDABLE AND SAFE SYSTEM OF TRANSPORTATION OPTIONS.

OUR COMMUNITY AS WELL AS NEIGHBORING COMMUNITIES RELY ON THE CHEAP AND RELIABLE SHIPPING CONNECTION TO THE REST OF THE GLOBE. RECENT TENANTS LOCATING IN OUR PORT'S PLENTIFUL AVAILABLE SPACE, DEMONSTRATE THE WISDOM OF PROVIDING EARTH FRIENDLY LOGISTIC SOLUTIONS. THIS COMBINED WITH AN EFFICIENT FREEWAY CONNECTION AND DEPENDABLE RAIL SERVICE CREATE THE STRONG STIMULUS FOR A ROBUST AND GROWING INDUSTRIAL BASE THAT DRIVES THE AREA WIDE ECONOMY.

LONGSHOREMEN, BAR PILOTS, TUG CREWS, SHIP AGENTS, MECHANICS, VENDORS, SERVICE PROVIDERS, RAIL WORKERS, AND PORT PERSONNEL REALIZE DIRECT EMPLOYMENT WITH THE CURRENT FACILITIES' USE. AND THIS IS A VERY VIABLE SAFETY VALVE DUE TO HOMELAND SECURITY.

THERE APPEARS TO BE INVESTORS WILLING TO SPEND TENS OF MILLIONS OF DOLLARS IN THIS ECONOMICALLY DEPRESSED REGION, AND THAT IS RARE. WE FEEL CANADA CAN USE A LITTLE COMPETITION FOR THOSE OVERSEAS CUSTOMER DOLLARS. AND WE SURE CAN USE THE JOBS THIS WOULD CREATE HERE IN THE UNITED STATES.

WE WILL ALSO MAIL A HARD COPY OF THIS LETTER OF SUPPORT.

THANKFUL REGARDS,

ROBERT FISHER, PRESIDENT

GF/ERS, Kinneg

Rec'd 8/21/06 *JA*

Memorandum

To: Hiram Arden
Project Manager
U.S. Army Corps of Engineers
Navigation Section
PO Box 3755
Seattle, WA 98124-3755

From: Michael Tracy, President
Grays Harbor EDC

Subject: Support of plans to continue routine dredging and disposal activities, maintaining Grays Harbor and Chehalis River navigation Channel; Reference, CENWS-OD-TS-NS-25.

Mr. Arden,

The Grays Harbor Economic Development Council (EDC) strongly supports the Corps of Engineer's plan to continue routine dredging and disposal activities and maintaining the Grays Harbor and Chehalis River navigation channel.

It is vitally important to continue the dredging operation now and into the future. Deepwater access to the Port and businesses along the Chehalis River gives us marketability to companies looking for shipping routes along the west coast and to the Asian-Pacific markets. This access allows the Port and companies they work with to continually plan on expansion of shipping activities without the possibility of loss of shipping due to depth requirements.

Without a deep water channel, much of the growth that has occurred would halt and the loss of large ship traffic would have a tremendous negative impact on the Port and the Community at larger.

The EDC Board consists of 34 community leaders and elected officials whose core mission is to facilitate in the investment and job creation in Grays Harbor County. Marine transportation plays a key role in our community's growth and economic well being.

Again, we strongly support your plans to continue the activities outlined in your public notice, dated July 28, 2006.

Sincerely,

Page 2 of 2

Michael Tracy
President, CEO
Grays Harbor EDC
and Film Office
506 Duffy St
Aberdeen, WA 98520
360-532-7888
www.ghedc.com

CF. IERS, Kinney

Reid 8/22/06 ZA



Main Office
111 S. Wooding St.
PO Box 660
Aberdeen, WA 98520

August 18, 2006

360/533-9528
Fax 360/533-9505

Hiram Arden, Project Manager

U.S. Army Corps of Engineers

Navigation Section

P.O. Box 3755

Seattle, WA 98124-3755

E-Mail/Web Page
harbor@portgrays.org
portofgraysharbor.com

Re. Grays Harbor Maintenance Dredging

Westport Marina
PO Box 1601
Westport, WA 98595

Dear Mr. Arden,

360/268-9665
Fax 360/268-9413


Commissioners:
Jack Thompson
Stan Pinnick
Chuck Caldwell

I can't emphasize enough the importance of continued maintenance of Grays Harbor Navigational channel to our community. It is and has been critical to our local economy and our job creation efforts. In addition to the traditional wood products traded through Grays Harbor we have added the export of agricultural products from the mid-West and also provided service to the military in discharging a large LTMS vessel in 2005. We continue to pursue new trade opportunities that will further enhance the importance of the Navigational channel not only locally but also to the State and the Nation.

Executive Director:
Gary G. Nelson

Much of the economic activity in Grays Harbor County is attributable to the Port of Grays Harbor and indirectly the Federal Navigational channel. As an elected official I am very sensitive to the environmental impacts of the Port's activities and consequently I am very appreciative of the care and planning you have done to insure that maintenance dredging has minimal impact on our environmental resources. Thanks for your past work and we urge the continued maintenance of the Navigational Channel. Keep up the good work.

Regards,


Commissioner Chuck Caldwell, President
Port of Grays Harbor

cf: ERS, Kinney



RECEIVED
AUG 22 2006

August 17, 2006

Ms. Aimee Kinney
Environmental Resources Section
U.S. Army Corps of Engineers
P.O. Box 3755
Seattle, Washington 98124-3755
aimee.t.kinney@usace.army.mil

SUBJECT: Draft Environmental Assessment (DEA) for the Grays Harbor and Chehalis River
Navigational Project, (October 2007 – October 2011)

Dear Ms. Kinney,

Washington State Department of Natural Resources (DNR) appreciates the opportunity to review the Draft Environmental Assessment (DEA) for the Grays Harbor and Chehalis River Navigational Project, (October 2007 – October 2011). As you may be aware, the Aquatic Resources Program of the DNR manages state-owned aquatic lands (SOAL) within and near the project boundaries.

Specifically, DNR manages bedlands, tidelands, shorelands, and associated oyster tracts within the footprint of the proposed activities described within the DEA. DNR is interested in working with the local communities and stakeholders, and the United States Army Corps of Engineers (USACE) to learn more about how the proposed activities may have potentially altered, may potentially be altering, and may continue to alter certain characteristics of state owned aquatic land.

Given the nature of this issue, DNR must respectfully request an extension of the comment period. DNR looks forward to your response, and working collaboratively with you on this issue.

Sincerely,

Elizabeth Ellis
Environmental Review Coordinator
Aquatic Resources Program
360.902.1074

c: Craig Zora
Hugo Flores

Rec'd 8/24/06 A



August 21, 2006

Main Office
111 S. Wooding St.
PO Box 660
Aberdeen, WA 98520
360/533-9528
Fax 360/533-9505

Hiram Arden, Project Manager
U.S. Army Corps of Engineers
Navigation Section
P.O. Box 3755
Seattle, WA 98124-3755

EMail/Web Page
harbor@portgrays.org
portofgraysharbor.com

Re. Grays Harbor Maintenance Dredging

Dear Mr. Arden,

Westport Marina
PO Box 1601
Westport, WA 98595
360/268-9665
Fax 360/268-9413

Commissioners:
Jack Thompson
Stan Pinnick
Chuck Caldwell

Executive Director:
Gary G. Nelson

The purpose of the channel to provide safe and reliable access for large ocean going vessels to the communities of Grays Harbor continues to be met thanks to Army Corps of Engineer past efforts in maintaining the Federally authorized Navigational Channel. In conjunction with the Corps of Engineers maintenance dredging the Port of Grays Harbor and Weyerhaeuser Co. maintain 6 deepwater berths to support the traffic made possible by the Chehalis River Navigational channel. This maintenance is done with private and locally generated funding to compliment the Corps maintenance efforts. The Navigational channel is critical infrastructure for our local economy as well as protecting State and Federal interest in international trade. In addition to the traditional wood products traded through Grays Harbor we have added the export of agricultural products from the mid-West and also provided service to the military in discharging a large LTMS vessel in 2005. In conjunction with our rail connections the Navigational channel makes Grays Harbor a prime candidate for alleviating congestion in other Ports in the PNW.

Past economic impact studies done by the Port have shown that one in four jobs in Grays Harbor County are tied to Port of Grays Harbor activities. That is probably the best measure of how important the on-going maintenance of the Navigational channel is to our community. Equally important to us is the care and planning you have done to insure that maintenance dredging has minimal impact on our environmental resources. Our communities are also thankful for Corps commitment to maximizing the beneficial use of dredge spoils to mitigate coastal erosion. Thanks for your past work and we urge the continued maintenance of the Navigational Channel. Keep up the good work.

Regards,

Gary Nelson, Executive Director
Port of Grays Harbor



PACIFIC STATES MARINE FISHERIES COMMISSION

205 S.E. SPOKANE STREET, SUITE 100 • PORTLAND, OREGON 97202-6413

PHONE: (503) 595-3100 • FAX: (503) 595-3232

www.psmfc.org

August 26, 2006

RECEIVED

SEP - 5 2006

Ms. Aimee Kinney
Environmental Resources Section
U.S. Army Corps of Engineers
P.O. Box 3755
Seattle, Washington 98124-3755

Re: Draft Environmental Assessment Maintenance Dredging and Disposal Grays Harbor and Chehalis River Navigation Project.

Dear Ms. Kinney:

We appreciate the opportunity to comment on the Draft Environmental Assessment: Maintenance Dredging and Disposal Grays Harbor and Chehalis River Navigation Project. Our comments focus on the need for the EA to address the issue of aquatic nuisance species (ANS). Specifically, we are concerned about the EA's lack of reference to ANS and the potential for dredging activities to spread ANS, and the lack of mitigative actions that will prevent the spread of ANS. Aquatic Nuisance Species pose a significant and ever-increasing threat to the health of our Nation's ecosystems economy. We are particularly concerned about potential ANS impacts on salmon and steelhead stocks, many of which are listed under the endangered species act.

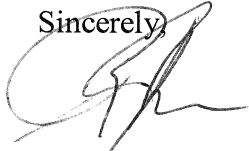
Dredges which travel up and down the coast have the potential of spreading aquatic nuisance species estuary to estuary. Dredge traffic coming from the San Francisco Bay Estuary is of particular concern, as the San Francisco Estuary is one of the most highly invaded aquatic ecosystems in the world. There are numerous invasive species (*e.g.* Chinese Mitten Crab) in the San Francisco Estuary (and other estuaries) that if introduced in to Grays Harbor could cause great environmental harm. Anything that is attached or in residual sediments in the hoppers will most certainly become dislodged and relocated to the harbor or disposal sites.

Therefore we request that the EA address how the dredging activities will be in compliance with the Washington ballast law and what assurance there are that the hopper and clamshell dredges are "clean" before entering the work site - and before leaving to go to another area. Mitigative actions that we recommend for solid ballast, ballast water and the ship hull include pressure washing with hot water, flushing the ballast water tanks, and using potable water vs. bay waters for ballast.

We also request that you consult with the Washington Department of Fish and Wildlife's Aquatic Nuisance Species Program for more specific detail on the recommendations cited by contacting Pam Meacham of WDFW at meachpmm@dfw.wa.gov for further information.

Thank you for this opportunity to comment. Please contact me or our ANS project manager Stephen Phillips if you have any questions at 503-585-3100.

Sincerely,

A handwritten signature in black ink, appearing to be 'Randy Fisher', written over the word 'Sincerely,'.

Randy Fisher
Executive Director

Kinney, Aimee T NWS

From: Brady Engvall [brady@bradysoysters.com]
Sent: Tuesday, September 05, 2006 11:39 AM
To: Arden, Hiram T NWS
Cc: Kinney, Aimee T NWS
Subject: CENWS-OD-TS-NS-25

Mark Ballo
Grays Harbor Oyster Grower Association
3714 Oyster Pl. E.
Aberdeen, WA 98520

Hiram Arden
Project Manager
Navigation Section

RE: CENWS-OD-TS-NS-25 (Maintenance Dredging, Grays Harbor)

Dear Hiram,
Please consider this e-mail as official comments of the Grays Harbor Oyster Growers. Thank you for the opportunity to express our concerns regarding the Environmental Assessment of the proposed dredging program for the navigation channel. As an organization we are not opposed to maintenance dredging but have continuing concerns with the negative influence the Deep Draft Project is having on our shellfish growing areas in Grays Harbor(GH) and especially the Whitcomb Spit area.

Our view. Up until the Deep Draft Project there was a healthy shellfish farming area behind Whitcomb Spit and southward to the Ocosta Flats. The spit provided shelter from ocean wave energy that pounded all across the northwesterly portion of the spit. Abruptly after the Deep Draft Project was completed the upper portions of the spit started to move in a South Easterly direction covering the oysters beds as the sand marched unimpeded toward Ocosta. This has not abated and is causing damage to shellfish growing areas in south bay and the shoreline of Ocosta.

When the navigation channel was widened, deepened and straightened it caused even greater wave energy to enter GH. With this additional energy it was enough to move the sand spits that have historically provided protection for the shellfish culture areas. Not only has the Whitcomb Spit area been affected but the North Bay, GH has experienced the same problems.

A study was commissioned by the Port of GH to better understand the problems that the shellfish growers were expressing. The study did not draw the same conclusions that the growers were seeing everyday as they ply the estuary at their job. The shellfish industry would like to see more effort put into better understanding Deep Draft effects so that better decisions can be made by agencies as well as the growers themselves. It would also be helpful to indemnify the shellfish industry for losses they have sustained through no fault of their own.

Mark Ballo President of Grays Harbor Oyster Growers

Brady Engvall ===== brady@bradysoysters.com
Ph: 360-268-5518 Fax:360-268-9828

9/5/2006



September 6, 2006

RECEIVED
SEP - 8 2006

Ms. Aimee Kinney
Environmental Resources Section
U.S. Army Corps of Engineers
P.O. Box 3755
Seattle, Washington 98124-3755

RE: PN CENWS-OD-TS-NS-25, Continued Maintenance Dredging of the Grays Harbor and Chehalis River Project, FY 2007 – 2011

Dear Ms. Kinney:

Thank you for giving Washington State Department of Natural Resources (DNR) an opportunity to comment on the continued maintenance of the Grays Harbor and Chehalis River Navigation Channel, FY 2007 – 2011. DNR has reviewed the Environmental Assessment (EA) developed for this action under the National Environmental Policy Act (NEPA). DNR also requested from the U.S. Army Corps of Engineers (U.S. Corps), and was provided with, an extension, so that further information could be gathered prior to developing this letter. DNR appreciates the cooperation and patience shown by the U.S. Corps in this matter.

DNR Aquatic Resources and Natural Area Programs would like to submit the following joint comment letter on the continued maintenance dredging of the Grays Harbor and Chehalis River Project, FY 2007 – 2011.

Washington Department of Natural Resources State Lands

The Washington State Department of Natural Resources (DNR) manages over 5 million acres of state lands, including 3 million acres of upland trust lands, 2.4 million acres of aquatic lands, and nearly 120,000 acres of natural areas.

State owned aquatic lands include shorelands, tidelands, and beds of navigable waters throughout Washington State, including aquatic lands located within and around many harbor areas. The DNR Aquatic Resources Program (DNR Aquatics) has been directed to manage state owned aquatic lands in a manner that provides a balance of public benefits for Washington State. These public benefits include encouraging direct public use and access, fostering water-dependent uses, ensuring environmental protection, utilizing renewable resources, and generating revenue consistent with the other benefits.

The Natural Areas Program manages Natural Area Preserves (NAPs) and Natural Resources Conservation Areas (NRCAs). Natural areas protect high quality examples of Washington's natural heritage. Natural area preserves within or adjacent to Grays Harbor include Whitcomb Flats NAP,

Sand Island NAP, Goose Island NAP, North Bay NAP, and the Chehalis River Surge Plain NAP. State-owned NAPs receive the highest level of conservation protection under statutory direction in Chapter 79.70 of the Revised Code of Washington. In addition to conservation of natural features and ecosystem function, their main purposes include research and environmental education, which may include public access where consistent with conservation objectives.

Specific Comments

Encourage Increased Level of Specificity in Final Analysis Prior to Permit Issuance

Overall, DNR encourages the U.S. Corps to increase the level of analysis with regards to impacts on state-owned lands in the action area. DNR emphasizes addressing the following questions prior to (1) the final NEPA document and FNSI, and (2) issuance of the dredging permit:

- 1) How will U.S. Corps permitted actions impact state lands managed by the DNR within the action area?
- 2) How will the U.S. Corps offset impacts to DNR lands now and in the future?
- 3) How are natural area preserves throughout the harbor and in the lower Chehalis River impacted by the continuation of the dredging and disposal program, including cumulative impacts?
- 4) How is the U.S. Corps incorporating any of these impacts under their Long Term Management Strategy for the Grays Harbor-Chehalis area?

Most importantly

- 5) How can DNR and the U.S. Corps work collaboratively, with other interested entities, to address these questions?

Collaboratively Working with the Corps on DNR State Land Issues

With reference to section 11.3, *Whitcomb Flats* (p. 24):

The statement “*DNR later decided not to pursue the study as a local sponsor* (par. 2, line 9)” may have been correct in 2001, but DNR has not concluded this statement is correct for the current year, nor for the proposed FY 2007-2011 Maintenance Dredging and Disposal Program. Thus, DNR considers this path currently a potential option for pursuing a collaborative approach to studying impacts and solutions with the U.S. Corps. DNR requests that the U.S. Corps remove this statement and update this section to include the following components:

- 1) Current and past research that has been completed on the impacts to DNR land in the Whitcomb Flats area
- 2) Current status of U.S. Corps efforts to mitigate or otherwise offset impacts to DNR land in the Whitcomb Flats area
- 3) Current state of U.S. Corps and DNR’s relationship to address impacts on DNR land in the Whitcomb Flats area
- 4) Current funding options being explored to address impacts on DNR land in the Whitcomb Flats area and the potential to address impacts to the other Grays Harbor NAPs through this mechanism

5) Next steps

DNR is interested in pursuing section 111 funding as an option. Section 111 of the 1968 River and Harbor Act under the Continuing Authorities Program (CAP) allows the U.S. Corps to provide for the prevention or mitigation of erosion damages to publicly or privately owned shores along the coastline of the United States when the damages are the result of a Federal navigation project. These funds are intended not to restore shorelines to historical dimensions, but only reduce erosion to a level that would have exists without the construction of the Federal navigation project.

Encourage Further Research into Cumulative, Continued and New Impacts

In Cumulative Impacts, section 10, par. 3, page 22, the following statement is made:

Though annual maintenance dredging does result in mortality and reduced habitat value for a variety of marine and estuarine species, the continuation of the Corps maintenance dredging program would not result in any new impacts to ecological function given the existing degraded condition of the navigation project area.

DNR does not concur with this statement. This statement contrasts with recent research on the mechanisms behind the fate and transport of sediment in Grays Harbor, and specifically, the movement and erosion of Whitcomb Flats (“Dynamics of Whitcomb Flats”, Osborne, 2003). Osborne has noted that the migration rate of Whitcomb Flats, as it erodes, has increased.

Incorporate Outside Research Into Analysis

In a study designed to provided baseline information on the physical processes and geomorphology needed to assess the potential impacts to Whitcomb Flats by the ongoing maintenance of the navigational channel, Osborne (2003) of Pacific International Engineering concluded that Whitcomb Flats was experiencing a steady increase in wave height over time, potentially contributing to “overtopping”, a wave-induced washover process, slowly eroding away this spit.

Osborne (2003) placed this into context by stating there were a number of navigational activities that appeared to have contributed to an overall geomorphological change in Grays Harbor inlet, which in turn, led to an increase in wave energy and height. Osborne did not rule out ongoing dredging as a contributing factor, but considered dredging, scour and the overall southward migration of the channel as factors that have contributed to an increased depth of the Grays Harbor inlet throat, which in turn opens the door for higher ocean wave energy, the primary factor in overtopping at Whitcomb Flats.

Another study (“Sediment transport paths at Grays Harbor, Washington”, Osborne, Davies, and Cialone, 2003) indicates the potential for sediments near the dredged channel to be distributed throughout a large portion of the harbor, including the vicinity of natural area preserves. The impact of dredging on these sites has not been analyzed or addressed.

Based on the continued loss of state land on Whitcomb Flats (not including other state land), and the link to dredging in this study, DNR would recommend revisiting the statement that “no new impacts” are occurring. DNR strongly recommends that the U.S. Corps analyze the cumulative ecological and economic impacts of all navigational activities approved under this 5-year permit on all DNR land, before making the statement that “no new impacts” are occurring (see next section). DNR may be able to provide the U.S. Corps some of the data necessary for such an analysis.

Address Economic Impacts in Analysis

A number of oyster growers within the action area have either not renewed, cancelled, or amended oyster leases on state owned aquatic lands, citing that the once highly productive Class II oyster tracts were either being washed away or submerged by sand. DNR Aquatics estimated an annual loss of approximately \$57,000 in lease revenue to the state, which includes only revenue intended for the state of Washington and does not include any potential impacts to the oyster growers or local economies.

Has an economic analysis been prepared for this action that addresses the impacts to state lands, oyster growers, and local communities? If not, DNR would like an economic analysis included in this Environmental Assessment disclosing the potential impacts of all permitted activities to any revenue producing state managed lands. Suggested components of such an analysis include:

- 1) Potential impacts on revenue to the state
- 2) Potential impacts on revenue to a private business
- 3) Potential impacts on surrounding local economy (generally as a result of (2))

Encourage Erosion and/or Sediment Control Measures for State Lands under section 6.3

DNR notes that there is no reference to any method of erosion or sediment control for the state land in question under section 6.3: *Mitigation Measures Incorporated into the Maintenance Dredging Program*.

DNR is concerned that a permit would be issued without (1) analysis of potential impacts to DNR land and (2) mitigation for any realized or supported impacts to DNR state land. DNR suggests that the U.S. Corps consider revisiting these issues prior to concluding their action is not significant.

DNR would like to work with the U.S. Corps, Southwest Erosion Study Group (Ecology, USGS), private lessees, and Coastal Communities of Southwest Washington on trying to find the best way to offset impacts while still allowing for continued navigational activities.

Summary

As stated by the U.S. Corps, in the Draft EA, section 11.3, *Whitcomb Flats* (p. 24):

“Over the past decade, many prime oyster lands in South Bay have been lost due to migration and erosion of Whitcomb Spit. Shifting sands bury oyster beds and/or change

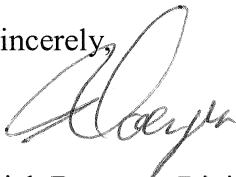
the substrate from more productive mud to compacted sand. Exposure to higher wave energy interrupts harrowing (harvest) operations, further affecting production. Several oyster growers have been forced to shift production to marginal areas where growth rates are not as high and oyster quality is low. These morphological changes occurring at Whitcomb Flats are attributable to the installation of the North and South Jetties at the entrance to Grays Harbor. The jetties are causing a general deepening of the harbor inlet, as intended."

This statement supports that navigational activities by the Corps have caused a general deepening of the harbor inlet (as intended) thereby increasing wave energy to such proportions that adverse impacts – ecologically and economically – have been occurring on state aquatic lands. Outside research (Osborne, 2003) states that dredging is another factor contributing to increased wave energy and height. Thus, it is strongly recommended that:

- 1) The U.S. Corps include a complete analysis of the impacts, including cumulative impacts, to DNR managed state land within this NEPA document, including an analysis of the economic impacts of their activities on both DNR, private landowners, and surrounding communities utilizing all available research;
- 2) The U.S. Corps consider revisiting section 111 CAP funding options, and any other available funding options, remaining flexible with cost-share requirements;
- 3) The U.S. Corps would not issue a dredging permit until it has worked with DNR on how to proceed with addressing concerns in this letter on potential state aquatic land and the natural area preserves.

DNR looks forward to working collaboratively with the U.S. Corps on this issue and learning more about any other expected impacts to state lands.

Sincerely,



Rich Doenges, Division Manager
Resources Division



Kit Metlen, Division Manager DNR Aquatic
DNR Asset Management and
Protection Division

cc: Hiram Arden, Navigation Section, USACE
Miriam Butler, Environmental Resources Section, USACE
Craig Zora, Rivers District, DNR
Scott Robinson, Rivers District, DNR
Curt Pavola, Natural Areas Program Manager
Derrick Toba, Policy Unit, DNR
Hugo Flores, Policy Unit, DNR
Elizabeth Ellis, Policy Unit, DNR
George Kaminsky, SW Coastal Erosion Group, Ecology

Appendix C
Corps Responses to Comment Letters

The Corps received a total of ten letters on Public Notice CENWS-OD-TS-NS-25 (July 28, 2006) and the Draft Environmental Assessment (EA). These letters can be found in Appendix B.

Letters of support were received from the six organizations and individuals listed below. The comments made in these letters have been noted, and the have letters included in the project record. The Corps has determined that no additional responses to these letters are necessary.

- Grays Harbor Chamber of Commerce
- Captain Stephen Cooke, Bar and Docking Pilot
- International Longshore and Warehouse Union #24
- Grays Harbor Economic Development Council
- Chuck Caldwell, Port of Grays Harbor Commissioner
- Gary Nelson, Port of Grays Harbor Executive Director

The Washington Department of Natural Resources (DNR) submitted a letter requesting an extension to the comment period. The comment period was extended, and DNR submitted a comment letter within the time period provided for the extension.

Comments provided in the remaining three letters are summarized below, followed by Corps responses.

1. Pacific States Marine Fisheries Commission

COMMENT:

“...Our comments focus on the need for the EA to address the issue of aquatic nuisance species (ANS). Specifically, we are concerned about the EA’s lack of reference to ANS and the potential for dredging activities to spread ANS, and the lack of mitigative actions that will prevent the spread of ANS”.

“...Therefore we request that the EA address how the dredging activities will be in compliance with Washington State ballast law and what assurance there are that the hopper and clamshell dredges are “clean” before entering the work site - and before leaving to go to another area. Mitigative actions that we recommend for solid ballast, ballast water and the ship hull include pressure washing with hot water, flushing the ballast water tanks, and using potable water vs. bay water for ballast...”

RESPONSE:

Information on ANS and ballast management mitigation measures has been incorporated into section 6.3 of the final EA.

2. Grays Harbor Oyster Grower Association

COMMENT:

“...As an organization we are not opposed to maintenance dredging but have continuing concerns with the negative influence the Deep Draft Project is having on our shellfish growing areas in Grays Harbor (GH) and especially the Whitcomb Spit area.”

“...When the navigation channel was widened, deepened and straightened it caused even greater wave energy to enter GH. With this additional energy it was enough to move the sand spits that have historically provided protection for the shellfish culture areas. Not only has the Whitcomb Spit area been affected but the North Bay, GH has experienced the same problems.

“A study was commissioned by the Port of GH to better understand the problems that the shellfish growers were expressing. The study did not draw the same conclusions that the growers were seeing everyday as they ply the estuary at their job.”

“The shellfish industry would like to see more effort put into better understanding Deep Draft effects so that better decisions can be made by agencies as well as the growers themselves.”

“It would also be helpful to indemnify the shellfish industry for loses they have sustained through no fault of their own.”

RESPONSE:

As described in Section 9.4 of the EA, there has been an increase in the height of extreme storm waves at Whitcomb Flat since 1955. However, an analysis commissioned by the Port of Grays Harbor to study the erosion/migration of Whitcomb Flats found no significant variation in the wave height time series that correlated with the channel realignment in the late 1970s nor the Navigation Improvement Project completed in 1991 (Osborne 2003). Instead, there was a steady increase in wave height through time. Osborne (2003) attributed this change to the general increase in depth of the inlet throat, as well as the shifting of the deepest part of the channel to the south.

Due to the role the jetties have played in this deepening of the inlet throat, the Corps remains willing (dependant on program funding) to work with the Washington Department of Natural Resources (DNR) to evaluate impacts and develop mitigation measures for Whitcomb Flats under the authority of Section 111 of the Rivers and Harbors Act of 1968. Under Section 111, with the active participation of a non-Federal sponsor such as the DNR, the Corps may investigate and implement measures to prevent or mitigate damage to shoreline attributable to Federal navigation projects.

3. Washington Department of Natural Resources

COMMENT:

“...DNR encourages the U.S. Corps to increase the level of analysis with regards to impacts on state-owned lands in the action area. DNR emphasizes addressing the following questions prior to (1) the final NEPA document and FNSI, and (2) issuance of the dredging permit:

- (1) How will U.S. Corps permitted actions impact state lands managed by DNR within the action area?*
- (2) How will the U.S. Corps offset impacts to DNR lands now and in the future?*
- (3) How are natural area preserves throughout the harbor and in the lower Chehalis River impacted by continuation of the dredging and disposal program, including cumulative impacts?*
- (4) How is the U.S. Corps incorporating any of these impacts under their Long Term Management Strategy for the Grays Harbor-Chehalis area?*
- (5) How can DNR and the U.S. Corps work collaboratively, with other interested entities, to address these questions?”*

RESPONSE:

(1) Impacts of maintenance dredging on Whitcomb Flats are discussed in the new section 9.4 of the final EA. The dynamics of the Sand Island area appear to be related to sediment bypass of the North Jetty, rather than maintenance dredging. Sand Island has been migrating east-to-west as it has aggraded at a rate of about 200,000 cy/year between 1987-2002 (Byrnes and Baker 2003). The Goose Island Natural Area Preserve (NAP), North Bay NAP and Chehalis Surge Plain NAP are outside the geographic area affected by continued maintenance dredging. However, the created slough described in section 8.3 of the EA is located just downstream of the Chehalis Surge Plain NAP, so the results of the Corps’ 10-year monitoring program (Simenstad et al. 2001) may provide useful information on the state of the Chehalis Surge Plain NAP.

(2) The Corps has determined that continued maintenance dredging will have a negligible impact on DNR lands, so no mitigation is warranted as part of this proposed action (see section 9.4 in the final EA).

(3) See response to 1. above, as well as the response to DNR comments on the cumulative effects analysis below.

(4) The purpose of the Long-Term Management Strategy (LTMS) Study is to evaluate impacts of erosion near the South Jetty on navigation project features, and develop a long-term strategy to maintain and protect Grays Harbor navigation project features (see section 11.1 of the final EA). Implementation of strategy alternatives may require preparation of NEPA documentation, and impacts of those alternatives on DNR lands at Whitcomb Flat and Sand Island would be considered in the effects analysis.

(5) Among the effects attributable to the Federal navigation project, it is the jetties, rather than continued maintenance dredging, that have been identified as the predominant cause of changes to DNR lands (see section 9.4 in the final EA). Because the impact of continued maintenance

dredging of the navigational channel is negligible, the Corps' Section 111 authority, discussed previously, would be the appropriate way to evaluate impacts of the Navigation Project on DNR lands.

DNR comments on Section 11.3 of the EA have been incorporated directly into the document.

COMMENT:

"In Cumulative Impacts, section 10, par. 3, page 22, the following statement is made:

Though annual maintenance dredging does result in mortality and reduced habitat value for a variety of marine and estuarine species, the continuation of the Corps maintenance dredging program would not result in any new impacts to ecological function given the existing degraded condition of the navigation project area.

DNR does not concur with this statement. This statement contrasts with recent research on the mechanisms behind the fate and transport of sediment in Grays Harbor, and specifically, the movement and erosion of Whitcomb Flats ("Dynamics of Whitcomb Flats," Osborne, 2003). Osborne has noted that the migration rate of Whitcomb Flats, as it erodes, has increased."

RESPONSE: Earlier in the cumulative impacts analysis, the Corps acknowledges that the Grays Harbor and Chehalis River Navigation Project has been a contributing factor in the alteration of historic habitats, resulting in the loss of intertidal area and conversion of shallow water habitats to deeper water. Construction of the North Jetty and South Jetty resulted in significant alterations to the bathymetry of the outer harbor. The jetties have in the past and continue to contribute to a general deepening of the harbor inlet and changes in the distribution of major morphological features, including the current eastward migration of Whitcomb Flats. This is an impact of the Navigation Project, but it is not a new one. This impact is occurring in response to construction of structures between 1898 and 1916, and their major rehabilitation in the 1930s and 1940s.

The Corps' cumulative effects analysis does not evaluate the significance of all impacts incurred over the past 100 years as a result of the Navigation Project. Present effects of past actions are relevant and useful to the analysis only when they have a significant cause-and-effect relationship with the effects of the proposed project. In accordance with applicable regulations and case law, this analysis evaluates the impacts of the proposed action—continued maintenance dredging—to determine whether the reasonably foreseeable effects of that proposed action may have a continuing, additive, and significant relationship to past impacts. Since the proposed action is a continuation of the current type and intensity of human use in the project area, the Corps determined that continued maintenance dredging will not result in significant cumulative effects.

DNR comments on incorporating information from Osborne (2003) into the EA's analysis have been addressed in the new section 9.4 in the final EA.

COMMENT:

“Has an economic analysis been prepared for this action that addresses the impacts to state lands, oyster growers, and local communities? If not, DNR would like an economic analysis included in the Environmental Assessment disclosing the potential impacts of all permitted activities to any revenue producing state managed lands. Suggested components of such an analysis include:

- (1) Potential impacts on revenue to the state*
- (2) Potential impacts to revenue to a private business*
- (3) Potential impacts on surrounding local economy (generally as a result of (2))”*

RESPONSE:

The Corps has determined that the proposed action will have a negligible effect on DNR lands and oyster growers (see section 9.4 in the final EA). Because the effects on the natural or physical environment are less than significant, this type of economic analysis is not warranted for this EA.

COMMENT:

”DNR notes that there is no reference to any method of erosion or sediment control for state land in question under section 6.3: Mitigation Measures Incorporated into the Maintenance Dredging Program. DNR is concerned that a permit would be issued without (1) analysis of potential impacts to DNR land and (2) mitigation for any realized or supported impacts to DNR state land. DNR suggests that the U.S. Corps consider revisiting these issues prior to concluding their action is not significant.”

RESPONSE:

The proposed action under consideration in this EA is not the continued existence of the Navigation Project (i.e., the channel and jetties). The proposed action is continued maintenance dredging. The existing condition reflects the presence of the jetties and navigation channel, so an analysis of the effects of past projects (i.e., jetty construction/maintenance, channel realignment, or widening/deepening) is not included.

As described in section 9.4 of the final EA, the predominant impacts to DNR lands that are attributable to the Federal navigation project result from past Corps actions (e.g., installation of the jetties). The contribution of routine maintenance dredging to increased depth in the inlet throat, and the subsequent increase in wave height at Whitcomb Flat, is minor. Therefore, no mitigation is included in the proposed action.

However, the Section 111 authority discussed previously allows the Corps to study and implement projects for mitigation of shore damages attributable to federal navigation projects (see section 11.3 in the final EA). Re-initiation of the Whitcomb Flats Section 111 project would be an appropriate way to evaluate the impacts of the navigation features collectively on DNR lands.

COMMENT:

"DNR would like to work with the U.S. Corps, Southwest Erosion Study Group (Ecology, USGS), private lessees, and Coastal Communities of Southwest Washington on trying to find the best way to offset impacts while still allowing for continued navigational activities."

RESPONSE:

The Corps is willing to use an appropriate program, such as the Section 111 authority, to work collaboratively with DNR, its partners, and the Port of Grays Harbor to evaluate shoreline damage impacts of the navigation project and develop any appropriate mitigation measures for Whitcomb Flats. Once DNR is ready to move forward, we suggest sending a letter to Seattle District's Chief of Civil Programs (Mr. Lester Soule) specifically requesting re-initiation of the Whitcomb Flat Section 111 study. Re-initiation of the study would be dependent on Section 111 program funding.

Appendix D

Biological Evaluation

Biological Evaluation

Fiscal Years 2007-2011 Maintenance Dredging and Disposal Grays Harbor and Chehalis River Navigation Project Grays Harbor County, Washington

August 2006



**US Army Corps
of Engineers®**
Seattle District

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1. INTRODUCTION

In accordance with Section 7(a)(2) of the Endangered Species Act of 1973, as amended, and Section 305 of the Magnuson-Stevens Fishery Conservation and Management Act of 1990, as amended, this Programmatic Biological Evaluation (PBE) examines the impacts of five years of continued maintenance of the Grays Harbor and Chehalis River Navigation Channel by the U.S. Army Corps of Engineers, Seattle District. Between October 2006 and October 2011, an estimated 2.5 million cubic yards of sediment will be dredged annually from this deep draft Federal channel. Disposal of this material will occur at six existing disposal sites.

The Grays Harbor and Chehalis River navigation channel provides shipping access between the Pacific Ocean and Cosmopolis on the Chehalis River, Grays Harbor County, Washington. The 23.5 mile long deep-draft navigation channel is dredged annually in order to maintain authorized project depths. Without annual maintenance dredging, shoaling would reduce the ability of larger ships to enter and leave the harbor safely under full load or low tide conditions. See Figure 1 for a location and vicinity map.

The original Grays Harbor navigation channel was authorized by Congress in the Rivers and Harbors Act of 1896. The Grays Harbor and Chehalis River Navigation Project and regular Department of the Army maintenance dredging were authorized by the Rivers and Harbor Act of 1935, and modified in 1945 and 1954. In 1990, widening and deepening of the navigation channel began as part of the Grays Harbor Navigation Improvement Project (NIP), which was authorized by Section 202 of the Water Resources Development Act of 1986 (Public Law 99-662) in November 1986. NIP construction was completed in 1999.

The Corps previously submitted a PBE to NOAA Fisheries and U.S. Fish and Wildlife Service (USFWS) on December 20, 2000. Informal consultations with both agencies resulted in their concurrence with determinations made in the previous PBE (NMFS Reference WSB-00-559 and FWS Reference 1-3-01-I-1383, 1-3-02-I-0371, 1-3-03-I-0771, 1-3-04-I-0403, 1-3-05-I-0114).

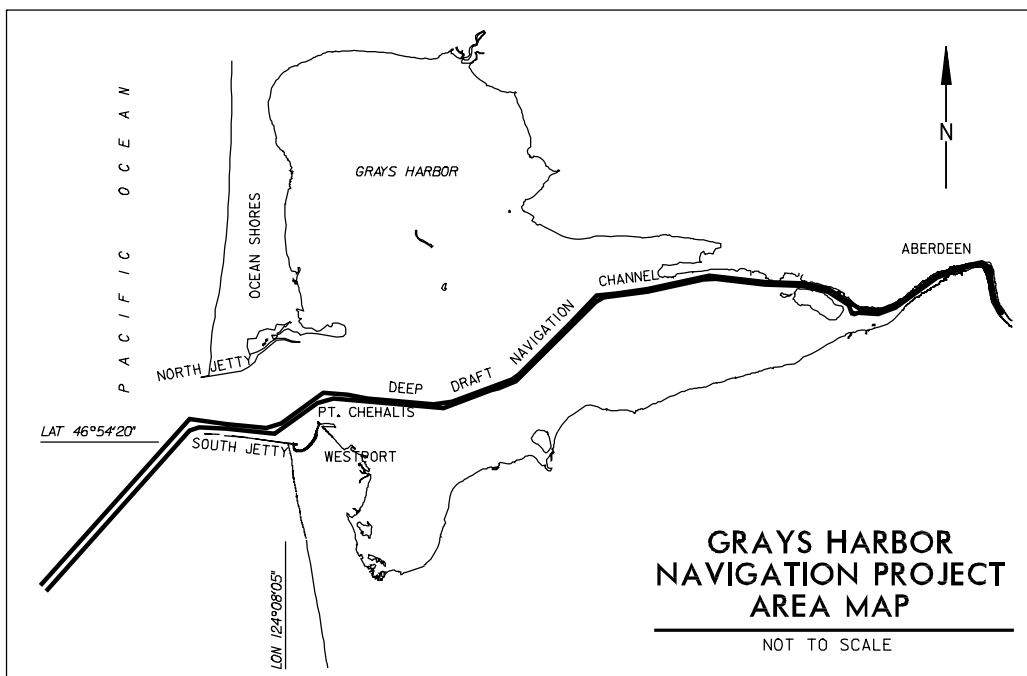
2. PROJECT DESCRIPTION

The Grays Harbor Navigation Channel has been divided into nine discrete reaches based upon physical characteristics and dredging requirements. Please see Figure 2 for the locations of these reaches, and Table 1 for a summary of volume, channel dimension, disposal site, and timing information specific to individual reaches.

2.1 *Dredging*

The five “*inner harbor*” reaches—South Aberdeen, Cow Point, Hoquiam, North Channel, and Inner Crossover—are dredged using contractor clamshell dredges. Two turning basins within the inner harbor are also dredged: the Elliott Slough Turning Basin in the South Aberdeen Reach, and the Cow Point Turning Basin in Cow Point Reach. Dredging occurs during the fall and winter months, due to the need to remove shoals resulting from high river flows and the need to avoid dredging during salmonid migrations in the spring and early summer. Approximately 1.5 million cubic yards are dredged annually from the inner harbor reaches and turning basins.

GRAYS
HARBOR
PROJECT



HORIZONTAL DATUM: NAD 83

U.S. ARMY ENGINEER DISTRICT, SEATTLE
CORPS OF ENGINEERS
SEATTLE, WASHINGTON

WESTPORT, WA & VICINITY
GRAYS HARBOR DREDGING/DISPOSAL

VICINITY AND AREA MAP

DATE:

7 JULY 2006

PUBLIC NOTICE:

CENWS-OD-TS-NS-25

FIGURE I

The four “**outer harbor**” reaches—Outer Crossover, South, Entrance/Point Chehalis, and Bar Channel—are dredged in the spring with hydraulic (or hopper) dredges. Hopper dredges are better suited for use in the more exposed outer harbor because clamshell equipment requires two barges moored together, and this can be hazardous in choppy seas. The Government hopper dredges *Essaysons* and *Yaquina* have annual assignments to Grays Harbor to perform outer harbor maintenance dredging. During years when pump-off capabilities are required for disposal at the upland Half Moon Bay direct beach nourishment site (Point Chehalis revetment extension mitigation stockpile), a contractor hopper dredge is used for a portion of the outer harbor work (see Section 3.2). Dredging occurs during the spring, due to favorable weather/wave conditions and in order to reduce impacts to the Dungeness crab fishery. Approximately 1 million cubic yards are dredged annually from the outer harbor reaches.

A typical channel cross section can be found on Figure 2. The side slopes of the navigation channel vary throughout the harbor. Slopes progressively steepen toward the mouth of the Chehalis River, since finer substrates are more cohesive and can therefore maintain a steeper slope. Representative slopes range from 1V:3H in the South Aberdeen, Cow Point, and Hoquiam reaches, to 1V:5H in the North, Crossover, and inner portion of the South Reach channels, to 1V:10H in the outer portion of South Reach, Entrance and Bar reaches.

2.2 Disposal

Disposal of maintenance dredged material occurs only at approved, designated disposal sites. Two Washington Department of Natural Resources (DNR) public, multi-user unconfined open water dredged material disposal sites are located directly adjacent to the navigation channel. The Point Chehalis and South Jetty sites are located on state-owned aquatic lands, and are managed by DNR. One Environmental Protection Agency (EPA) designated ocean disposal site, Southwest (3.9 mile), is located adjacent to the Bar channel. In addition, material dredged from the sandy outer reaches of the channel is periodically used for both direct beach (upland) and nearshore nourishment at Half Moon Bay, and nearshore nourishment at South Beach. See Figure 2 for the location of these sites, which are discussed individually below.

The channel sediments have been tested and approved for unconfined open water disposal under the guidelines of the Dredged Material Management Program (DMMP) administered by the Corps, EPA, Washington Department of Ecology (Ecology), and DNR. Additional sampling and analysis of inner harbor sediments occurs on a regular basis, as specified in the June 1995 *Dredged Material Evaluation Procedures and Disposal Site Management Manual for Grays Harbor and Willapa Bay*.

Materials dredged from the inner harbor reaches are primarily fine grain suspended/bedload material from tributary streams and rivers. Inner harbor material is disposed at the South Jetty site, and at the Point Chehalis site during adverse weather/wave conditions. Materials dredged from the outer harbor reaches are marine sands deposited by tidal action, and silty sand/sandy silt redistributed within the estuary by wind and wave action. Some outer harbor material is disposed at three “beneficial use” sites, including the Half Moon Bay nearshore nourishment site, Half Moon Bay direct beach nourishment site (mitigation stockpile), and the South Beach nearshore nourishment site.

Table 1. FY07-11 Maintenance Dredging Program by Reach

REACH	VOLUME (CUBIC YARDS)	SEDIMENT TYPE	DREDGE TYPE	CHANNEL DIMENSIONS¹	DISPOSAL AREA(S)	WORK CLOSURES	WORK SCHEDULED
S. Aberdeen	55,000 annually	silt / sand	clamshell	-32' MLLW 200-300' wide	South Jetty or Point Chehalis ²	15 Feb to 15 July	16 July to 14 Feb
Elliott Slough Turning Basin	60,000 biennially	silt / sand	clamshell	-32' MLLW 350-550' wide	South Jetty or Point Chehalis ²	15 Feb to 15 July	16 July to 14 Feb
Cow Point	750,000 annually	sandy silt	clamshell	-36' MLLW 350-550' wide	South Jetty or Point Chehalis ²	15 Feb to 15 July	16 July to 14 Feb
Cow Point Turning Basin	200,000 annually	sandy silt	clamshell	-36' MLLW 350-950' wide	South Jetty or Point Chehalis ²	15 Feb to 15 July	16 July to 14 Feb
Hoquiam	150,000 annually	sandy silt	clamshell	-36' MLLW 350' wide	South Jetty or Point Chehalis ²	15 Feb to 15 July	16 July to 14 Feb
North Channel	150,000 annually	silty sand	clamshell	-36' MLLW 350' wide	Point Chehalis	None	August to 14 Feb
Inner Crossover	200,000 annually	silty sand	clamshell	-36' MLLW 350-450' wide	Point Chehalis	None	August to 14 Feb
Outer Crossover	200,000 annually	silty sand	hopper ³	-36' MLLW 350' wide	Point Chehalis	No hopper after 31 May	April and May
South Reach	400,000 annually	sand	hopper ³	-36' MLLW 350-450' wide	Point Chehalis or Half Moon Bay	No hopper after 30 June	April to June
Entrance/ Point Chehalis	400,000 annually	sand	hopper	-40' to -46' MLLW 600-900' wide	South Jetty or Half Moon Bay or Point Chehalis	No hopper after 31 May	April and May
Bar Channel	250,000 as needed	sand	hopper	-46' MLLW 900' wide	South Beach or South Jetty or 3.9 mile ocean site	No hopper after 31 May	April and May

¹ Depths shown are authorized depths and do not include 2' advanced maintenance or 2' overdepth tolerance. Exceptions: South Aberdeen Reach has 0' advance maintenance and 1' overdepth tolerance. Elliott Slough Turning Basin has 3' advance maintenance for half of the channel (inside bend). Widths shown are those of the channel bottom, and do not include extra width at channel bends.

² Adverse weather/wave relief site.

³ Clamshell required after May 31 (Outer Crossover) and June 30 (South Reach)

The determination of which disposal site will be used during the course of maintenance dredging is based on a number of factors, including:

- the depth of each disposal area and the size of the Point Chehalis revetment extension stockpile, as surveyed annually;
- weather and wave conditions at the time of disposal;
- presence of commercial crab pots in a disposal site and/or access lane; and
- results of pre-disposal Dungeness crab surveys.

Dredged material is transported to disposal sites by either a bottom dump hopper dredge or by a tugboat and bottom-dump (or split-hull) barge. These vessels generally have the ability to transport between 800 and 6,000 cubic yards of material each trip. The number of barge discharges per day is typically between three and five, but this number varies depending on the extent of the dredging activity ongoing at the time.

A hydraulic pipeline is utilized for disposal at the upland Half Moon Bay direct beach nourishment site. The contractor hopper dredge full of sand docks at an existing rock dock at Firecracker Point, where a crane barge outfitted with an injection pump and jet adds water to the sediment in the hopper dredge bin. The hopper dredge offloads the resulting slurry of sand and water to a hydraulic booster pump on the crane barge. The booster pumps the slurry to an onshore pipeline landing for the across-town transport of material in a temporary plastic pipeline. The slurry of sand and water is discharged to the area in front of the buried revetment. A sand berm/perimeter dike separates the discharge area from Half Moon Bay. The slurry water temporarily ponds in the disposal site, and is conveyed via effluent pipe into Grays Harbor at the exposed rock revetment near Groin A. The sandy dredged materials quickly dewater and a dozer at the point of discharge grades the sand uniformly over the disposal area.

The six existing disposal sites are described below.

2.2.1 Point Chehalis Open Water Disposal Site

The depth of this site varies between –50 to –80' MLLW.¹ It is a dispersive site subject to high wave energy and strong, predominately westward, currents. The irregular bottom consists of fine to medium sized sand grains of marine origin. Historically, this site has been extremely deep. Charts that predate jetty construction show depths of –100' MLLW in this area. Over 35 million cubic yards of dredged material have been placed in this area since 1977, at an average rate of 1.7 million cy/year. Annual survey records indicate that approximately 75% of material disposed at this site erodes during the dredging period, and that another 15% erodes during the following winter. Bathymetric surveys indicate that most of this eroded material moves seaward along the South Jetty. Disposal at this location reduces erosion near the Point Chehalis

¹ The southern (landward) portion of the designated disposal site includes areas less than 40 feet deep. However, the shallow portion of the site is located near the Point Chehalis revetment groins. These groins are a navigation hazard for dredging equipment that draws at least 30 feet, so the southern portion of the disposal site is not used. Disposal occurs in the deeper northern portion of the disposal site.

revetment and groins. The Point Chehalis site is the most heavily used disposal site in Grays Harbor.

2.2.2 South Jetty Open Water Disposal Site

The depth of this site varies between –40 to –60' MLLW. This area is subject to fast tidal currents, predominately westward, that sweep along the jetty toe. The site is considered dispersive, with seaward erosion of disposed material generally occurring rapidly. However, in recent years some material has begun to mound in portions of the site. This accretion is being closely monitored so that disposal activities do not cause navigation concerns. The irregular bottom consists of fine to medium sized sand grains of marine origin. Placement of dredged material at this site is necessary to prevent scour and undermining of the South Jetty's toe. This site is the preferred disposal area for inner harbor materials, although when weather/wave conditions are hazardous then inner harbor materials are disposed at the Point Chehalis site.

2.2.3 Southwest (3.9 mile) Open Water Disposal Site

The depth of this ocean disposal site varies between –100 and –120' MLLW. This site was designated to minimize impacts to Dungeness crabs during the construction phase of the widening and deepening project. This site is not used often because little material is dredged from the Bar Channel. Also, material disposed at this site is unavailable for longshore transport (i.e., unable feed beaches to the north) so disposal at the South Beach nearshore nourishment site is preferred.

2.2.4 Half Moon Bay Nearshore Nourishment and Direct Beach Nourishment Sites

The purpose of these two disposal sites is to maintain a stable beach profile west of the Point Chehalis revetment extension constructed in 1998-1999 and to ensure that the armor stone toe of the revetment extension is not exposed. Sandy material from the outer harbor is placed on the Point Chehalis revetment extension (direct nourishment) and in the bay as close to shore as possible (nearshore nourishment), in accordance with the October 1998 *Point Chehalis Revetment Extension Project Inter-Agency Mitigation Agreement*.

The direct beach nourishment site is a stockpile located above the mean higher high water datum (+9 MLLW at this location), but sand from the site erodes into Half Moon Bay during storm events. Approximately 135,000 cubic yards of material was disposed at this site in 2002. It is expected that this disposal site will be used once during the 5-year term of this PBE.

The nearshore nourishment site is used for disposal as bathymetric conditions permit (i.e., when the bay is deep enough for the bottom dump barge to navigate). Since spring 2002, the bay has been deep enough to allow dredge access for disposal. Approximately 1.2 million cubic yards of material has been placed in this site since spring 2002.

2.2.5 South Beach Nearshore Nourishment Site

The purpose of disposal at this site is to slow erosion on the south side of the South Jetty. Sandy material from the Bar Channel is placed as close to shore as possible, generally between –35' and –40' MLLW. This location extends the residence time of dredged material in the littoral system while avoiding productive crabbing areas. Over 735,000 cubic yards of material has been placed in this site since spring 2002.

2.3 Dungeness Crab Mitigation Plot Maintenance

In accordance with the 1989 *Navigation Improvement Project Final EISS* and the 1998 *Revised Crab Mitigation Strategy Agreement*, the proposed action includes up to two placements of oyster shell on the existing Dungeness crab mitigation plots shown on Figure 2. Shortly after construction began on the navigation improvement project (NIP) in 1990, the Corps began placing oyster shell on tidal flats to enhance the survival of young Dungeness crabs following their metamorphosis from planktonic stages. Larval crab settle in the oyster shell plots, which provide cover and food, then 2 to 3 months later leave the intertidal flat for subtidal waters at a size that can survive most predation pressures. Periodic placement of shell is required to maintain functional crab habitat, which is lost annually to shell siltation and settling. Since the inception of the mitigation program, an estimated 18.13 million crabs have been produced by the oyster shell plots.

The South Channel mitigation plots are approximately 45 acres in size, and new shell will be placed only as overlay on these existing plots. Plot maintenance generally occurs every 3 years, depending on percent cover of shell within the plots and annual crab production rates. Placement occurs in the spring, prior to the settlement of larval crabs. Shell is obtained from local oyster growers, and may come from several sources depending on the quantity placed. If shell is obtained from outside Grays Harbor, the supplier is required to have a valid shellfish transfer permit from the Washington Department of Fish and Wildlife (WDFW). This permit requires the shell to be aged in an upland location to ensure that incidental transport of undesirable species will not occur.

Prior to shell placement, Corps biologists survey the plots for eelgrass. The location of all eelgrass patches are provided to the contractor, and marked with stakes visible from the water surface at high tide to ensure that the shell placement does not occur on eelgrass beds.

Up to 15,000 cubic yards of shell may be discharged on the plots during each of the two placements proposed. Shell coverage rates average about 800 cubic yards per acre. Areas targeted for placement are determined by considering past crab production, percentage shell cover, existing tidal elevation, and percentage eelgrass cover. Placement occurs at high tide, from a barge above the plots. No barge grounding occurs since shell is placed at high tide. Contractors have used a clamshell bucket or conveyor system to get the shell onto the plots. Generally, this work takes less than two weeks.

2.4 Conservation Measures

During the formulation of the existing maintenance dredging program, much care was taken to reduce environmental impacts. Several impact avoidance, minimization, and compensation measures have been incorporated into the maintenance program, including:

- To avoid impacts to bull trout and out-migrating juvenile salmon, the Corps does not dredge the South Aberdeen Reach, Cow Point Reach, Hoquiam Reach, and turning basins between February 15 and July 15. No timing restrictions related to salmonids apply downstream of Hoquiam Reach. The estuary is wider downstream of Hoquiam Reach, so a smaller proportion of the migratory pathway is affected by sediment plumes. Also, the relative

distance between dredging activities and the shallow sub-tidal habitat where juvenile foraging occurs is greater.

- To reduce entrainment of fish, shrimp, and crabs, the inner harbor reaches are dredged using a clamshell dredge.
- To reduce entrainment of Dungeness crabs, no hopper dredging occurs in outer harbor reaches during periods of peak crab abundance.
- Water quality monitoring occurs during inner harbor dredging when flow of the Chehalis River drops below 1,000 cubic feet per second at Hoquiam, as reported by the U.S. Geological Survey. The Corps notifies Ecology if dissolved oxygen (DO) levels fall below 5 mg/L. Dredging is ceased immediately if DO measurements fall below 4 mg/L
- To avoid significant impacts to Dungeness crab and marine fishes, trawl surveys occur in the Half Moon Bay Nearshore Disposal Site prior to any disposal activities. In accordance with Washington Department of Fish and Wildlife (WDFW) guidance, disposal does not occur if crab densities exceed 750 per hectare, if 25% of the crab 100 millimeters or larger are soft, if a large increase in newly settled young-of-the-year crab is encountered, or if any species of rockfish, flatfish, or lingcod is unusually abundant.
- Disposal at the Half Moon Bay nearshore disposal site and the South Beach disposal site is coordinated with commercial crab fisherman to reduce the potential for damage to crab pots.
- Disposal at the Half Moon Bay direct beach nourishment (mitigation stockpile) site is restricted to above +9' MLLW (the mean higher high water line at this location), pursuant to the *Point Chehalis Revetment Extension Mitigation Agreement*.
- To compensate for the loss of Dungeness crabs to the commercial fishery, the Corps places oyster shell on intertidal mudflats in order to improve survival rates for young-of-the-year crabs.

Potential impacts of continued maintenance dredging and disposal operations will be reduced and/or avoided through implementation of the mitigation measures described above. Due to these measures, impacts associated with continued maintenance dredging are not expected to be significant

2.5 *Interrelated and Interdependent Actions*

No interrelated or interdependent actions are associated with the proposed actions. Since dredged material disposal and crab mitigation plot maintenance are interrelated with channel dredging, all actions are evaluated in this document.

The Port of Grays Harbor conducts maintenance dredging of their marine terminal facilities adjacent to the federal navigation channel. An average of 30,000 cubic yards, or up to 70,000 cubic yards, is removed annually. Impacts of Port dredging are similar to those of the Corps dredging program, but occur in a more localized area over a shorter period of time. Separate Section 7 consultations will occur for Port dredging activities through the Corps' Regulatory Branch.

3. PROJECT AREA AND ACTION AREA

The project footprint consists of the navigation channel, disposal sites, and crab mitigation plots shown on Figure 2 (T17N, R10 W, Sections 9, 10, 11, 12, 13 and T17N R9W Sections 8, 9, and 10, 46°56'40.97"N, 124 °00'08.89"W). Up to 1,725 acres are disturbed by the Corps' annual maintenance dredging, with an additional 697 acres disturbed by disposal of this material. This area is equivalent to approximately 12% of the total acreage of subtidal habitat in the harbor. The crab mitigation plots cover 45 acres.

The action area consists of the lower mainstem Chehalis River, Grays Harbor, and the Pacific Ocean off the Harbor's mouth.

4. AFFECTED SPECIES

Several species protected under the Endangered Species Act of 1973, as amended, are potentially found in the action area. Table 2 provides a list of species, their listing status, and the occurrence of critical habitat within the action area.

Several changes in ESA designations have occurred since preparation of the last PBE in 2001. The Aleutian Canada goose (*Branta canadensis leucopareia*) was de-listed, the Southwest Washington/Columbia River cutthroat trout (*Salmo clarki clarki*) was determined to be not warranted for listing, and critical habitat was designated for Coastal/Puget Sound bull trout (*Salvelinus confluentus*). Two new species occurring in and outside Grays Harbor have been listed. The Southern Resident Killer Whale (*Orcinus orca*) was listed as endangered, and the Southern Green Sturgeon (*Acipenser medirostris*) was listed as threatened.

The following sections provide information supporting the Corps' effect determinations. Section 5 describes the environmental baseline and general effects of the proposed actions. Section 6 describes occurrence of individual species and their critical habitat in the action area, as well as effects of the proposed actions on those species and their critical habitats.

5. ENVIRONMENTAL BASELINE AND IMPACTS OF THE PROPOSED ACTIONS

Information on baseline environmental conditions was obtained from two primary sources: studies commissioned by the Corps in 1980 as part of the impact assessment for the navigation improvement project (NIP) and the Washington State Conservation Commission's habitat limiting factors report for the Chehalis and nearby drainages (Smith and Wenger, 2001). Although the NIP studies are dated, they are still some of the most thorough accounts of Grays Harbor ecology. Two primary limitations of these studies are their focus on juvenile salmonids and the limited geographical area of sampling (most occurred in "new" dredge areas impacted by channel widening).

This analysis has been abbreviated since the 2001 PBE, with more recent material used where available. Please review the 2001 PBE for a more thorough summary of the NIP reports.

Table 2. Endangered Species and Critical Habitat within the Action Area

SPECIES	LISTING STATUS	CRITICAL HABITAT STATUS	CRITICAL HABITAT IN ACTION AREA
Coastal/Puget Sound Bull Trout <i>Salvelinus confluentus</i>	threatened	designated	yes
Western Snowy Plover <i>Charadrius alexandrius nivosus</i>	threatened	designated	yes
Brown Pelican <i>Pelecanus occidentalis californicus</i>	endangered	none	—
Marbled Murrelet <i>Brachyramphus marmoratus</i>	threatened	designated	no
Bald Eagle <i>Haliaeetus leucocephalus</i>	threatened	none	—
Southern Green Sturgeon <i>Acipenser medirostris</i>	threatened	none	—
Eastern Stock Steller Sea Lion <i>Eumetopias jubatus</i>	threatened	designated	no
Southern Resident Killer Whale <i>Orcinus orca</i>	endangered	proposed	no
Humpback Whale <i>Megaptera novaeangliae</i>	endangered	none	—
Blue Whale <i>Balaenoptera musculus</i>	endangered	none	—
Fin Whale <i>Balaenoptera physalus</i>	endangered	none	—
Sei Whale <i>Balaenoptera borealis</i>	endangered	none	—
Sperm Whale <i>Physeter macrocephalus</i>	endangered	none	—
Leatherback Sea Turtle <i>Dermochelys coriacea</i>	endangered	designated	no
Loggerhead Sea Turtle <i>Caretta caretta</i>	threatened	designated	no
Mexican Nesting Green Sea Turtle <i>Chelonia mydas</i>	endangered	designated	no
Mexican Nesting Olive Ridley Sea Turtle <i>Lepidochelys olivacea</i>	endangered	designated	no

5.1 Water Quality

Potential point and non-point sources of contaminants in the action area are associated with past and existing land uses adjacent to the estuary. Industrial development along the lower Chehalis has included paper mills, timber and wood products industries, marine vessel moorage and repair, and fish processors. Poor water quality in the lower Chehalis River and inner Grays Harbor is thought to contribute to a bottleneck in Chehalis River salmon production (Smith and Wenger, 2001). Maricultural (oyster beds) and agricultural (cranberry bogs) uses are more typical for the outer harbor.

Washington State's current (2002/2004) Clean Water Act Section 303(d) list of impaired waterbodies includes the inner harbor for dioxin and water column bioassay, and the outer harbor for fecal coliform. Sampling in various areas of the harbor indicate that water temperature, dissolved oxygen, and pH standards are sometimes violated, but that these problems may be the result of natural conditions (e.g., solar heating of shallow water) or nutrient enrichment attributed to wastewater treatment plant effluent.

5.1.1 Turbidity

Dredging activities result in localized, short-term increases in turbidity. The severity and duration of the impact is related to the type of sediment being dredged and the type of dredge being used. Finer-grained material remains in the water column longer. Higher turbidity results from clamshell dredge activities due to the impact of the clamshell on the bottom and its subsequent withdrawal from the channel bottom through the water column to place the material in the waiting barge. In contrast, hopper dredges hydraulically suction material and then transfer it to a hopper bin, resulting in less sediment disturbance. Consequently, water quality degradation is of most concern during inner harbor dredging, where a clamshell dredge is used on silty material.

Choker Research at Grays Harbor College monitored water quality during inner harbor maintenance dredging during the summer of 1990 (Phipps *et al.*, 1992). Samples were taken at 34 sites. At each site, six stations were established around a clamshell dredge (two stations as close as possible to the dredge, two stations approximately 100 to 150 meters down-current in the plume, and two stations upstream of the dredge to represent ambient conditions). Three samples were taken at each station to represent the top, middle, and bottom of the water column. Efforts were made to sample in extreme conditions (i.e., the most turbid water and at slack tide) in order to record dredging conditions that were more degraded than average. Out of 600 samples, 23 samples registered a value of total suspended solids (TSS) higher than 500 mg/l. Seven of these 23 elevated TSS samples resulted from measurements of ambient conditions. The highest value of TSS was 3,000 mg/l (the associated ambient measurement was 700 mg/l). The higher TSS values were predominantly measured in the lower third of the water column.

Disposal of dredged material also results in elevated turbidity levels. During monitoring at other disposal sites across the country, maximum concentrations of suspended sediments observed during disposal activities were less than 1,000 mg/l (Pequegnat, 1983). Truitt (1986) found that very little suspended sediment persists near the surface or mid-water during dredged material disposal. The highest concentrations tend to occur in near-bottom waters, and are typically much

lower (less than 200 mg/l) in mid and upper water depths. Turbidity levels generally return to ambient conditions rather quickly and relatively little material is separated from the jet as it descends into the water column when a clamshell dredge has been used.

Placement of oyster shell on the mitigation plots would also result in increased turbidity. Sediment on the shell could be suspended while the shell falls through the water column, and bottom sediments would be disturbed when shell settles on the substrate. Any resulting turbidity plume would be localized and temporary in this well-mixed portion of the harbor.

The proposed actions would result in degradation of ambient conditions in the vicinity of operating equipment during and immediately following dredging and disposal events. Only one dredge operates in the inner harbor at a time, and multiple dredges operate in the outer harbor for very short periods of time (7-10 days during the annual *Essaysons* assignment), so listed species would not be likely to encounter multiple turbidity plumes at any given time. Conditions would be maintained harbor-wide, over the long-term.

5.1.2 Dissolved Oxygen

A decrease in dissolved oxygen (DO) levels occurs during dredging and disposal operations. Anaerobic sediments create an oxygen demand when suspended in the water column, which decreases dissolved oxygen levels. Suspension of fine-grained inner harbor sediments are more likely to affect dissolved oxygen levels than the sandy material dredged from the outer harbor reaches.

Choker Research DO measurements taken in a sediment plume 100 to 150 meters from a dredge operating in the inner harbor were comparable to nearby ambient water concentration, with most values were above 6 mg/l (Phipps *et al.*, 1992). The differential between DO levels in the dredge plumes and ambient areas were within 1 to 2 mg/l of each other (Phipps *et al.*, 1992). As required by the project Water Quality Certification issued by the Department of Ecology, the Corps monitors water quality during inner harbor dredging when flow of the Chehalis River drops below 1,000 cubic feet per second at Hoquiam. The Corps notifies Ecology if dissolved oxygen (DO) levels fall below 5 mg/L and dredging ceases immediately if DO measurements fall below 4 mg/L.

Disposal of inner harbor material is less likely, compared to the dredging of this material, to affect DO concentrations. Clamshell operations keep the dredged material consolidated, straining most water out of the sediment, which minimizes the tendency of the material to become resuspended in the water column during disposal. Given the rapid descent of material dredged by a clamshell dredge and the generally well-mixed nature of waters adjacent to the 5 in-water disposal sites, disposal activities are not likely to lead to appreciable reductions in dissolved oxygen in the mid and upper portions of the water column.

Placement of oyster shell on the mitigation plots would be expected to result in a very minor, localized, and temporary decrease in DO levels.

The proposed actions would result in degradation of ambient conditions in a localized area on a short-term basis. DO levels return to the baseline condition soon after equipment ceases operations; therefore, this indicator is maintained in the long term.

5.1.3 Contaminants

Sediments to be removed from the Grays Harbor channel have been tested and approved for open water disposal under the guidelines of the Dredged Material Management Program (DMMP) administered by the Corps, Environmental Protection Agency, Washington Department of Ecology, and Washington Department of Natural Resources. The requirements for determining the suitability of dredged material in Grays Harbor for unconfined, open-water disposal are documented in the 1995 *Dredged Material Evaluation Procedures and Disposal Site Management Manual, Grays Harbor and Willapa Bay, Washington* (the GHDMEP).

The Grays Harbor Navigation channel is low-ranked, meaning few or no sources of chemicals appear to contribute to channel sediments. This conclusion is based on existing data that show no or low levels of chemicals of concern and no significant toxic responses in biological tests.

The GHDMEP specifies a six-year “frequency” guideline during which sampling and testing of the entire channel must be completed. Alternating portions of the navigation channel (Inner Crossover to Hoquiam, and Cow Point to South Aberdeen Reaches) are characterized every other year. Coarse-grained sands found at the Bar, Entrance, and South Reaches meet no-test guidelines for high-energy areas under the Marine Protection, Research, and Sanctuaries Act.

Two rounds of sampling and sediment characterization have occurred since preparation of the last PBE in 2001. In June 2002, 600,000 cubic yards material from the Inner Crossover to Hoquiam Reaches were sampled, analyzed, and determined to be suitable for open water disposal. The most recent sampling took place in June 2004 and resulted in the characterization of approximately 900,000 cubic yards of sediment from the Cow Point, Aberdeen, and South Aberdeen Reaches. All data² supported the finding that proposed dredged material is suitable for open-water disposal (Anchor Environmental, 2004). The next round of sampling will occur prior to dredging in the fall of 2006, and will initiate the third 6-year cycle of GHDMEP sampling and testing which was first implemented in 1994. A suitability determination documenting this characterization is expected before the end of calendar year 2006.

Since the GHDMEP standards are designed to be protective of organisms that come into contact with sediments, concentrations and bioavailability of contaminants in sediments suspended during dredging and disposal are expected to be below levels that may cause harm to juvenile or adult salmonids.

² One *Neanthes* bioassay could not be interpreted due to quality control issues with the organism. The Dredged Material Management Unit (DMMU) in question was re-sampled in October 2004 and the bioassay rerun. The second sample passed all DMMP performance criteria, confirming that the sediments were suitable for open water disposal (Anchor Environmental, 2005).

5.2 *Habitat Conditions*

5.2.1 *Substrate*

The Chehalis River has a high sediment load, which is a factor in the frequency of dredging. Kehoe (1982) found that three Chehalis sub-basins—the Wynoochee, Middle Fork Satsop, and West Fork Satsop—discharged suspended sediments at an extremely high annual rate compared to other watersheds in western Washington and Oregon. Kehoe (1982) determined that a combination of steep topography, high rainfall, and deeply weathered surface soils make these sub-basins inherently susceptible to erosion and subsequent high sediment discharge levels, and that these natural conditions had been aggravated by forestry practices.

The inner harbor's substrate consists of sediments from the Chehalis River, while ocean derived sands occur in the outer harbor. A mixed transition zone occupies a broad band in the central portion of the harbor. River-borne silts are also found near river mouths in North Bay and South Bay. Wind generated waves are common and have a pronounced effect on the suspension and movement of shallow water sediments.

Substrate in most of the navigation channel and disposal site footprints are subjected to annual disturbance. Material dredged from the inner harbor is disposed at the Point Chehalis and South Jetty sites. These inner harbor materials are of a smaller size than the sands that naturally occur in the outer harbor. However, the dispersive nature of these sites prevents the accumulation of this finer material. The physical characteristics of material dredged from the outer harbor more closely matches physical characteristics of substrate in the disposal sites. Only material with the highest percentage of coarse sands is placed in the two nearshore and one upland/beach disposal sites. The proposed dredging and disposal actions would maintain existing substrate conditions.

Creation of the crab mitigation plots changed the substrate of the affected area from silt to shell. Over time, the shell subsides and is covered through deposition of fine sediments. Periodic placement of additional shell would maintain the altered substrate condition.

5.2.2 *Bathymetry*

The Grays Harbor and Chehalis River Navigation Project altered the bathymetry of Grays Harbor in several ways. Channel dredging deepened the natural north channel created by the Chehalis River and tidal currents. Historic dredged material disposal practices converted some of the inner harbor's intertidal flats to uplands and/or tidal marshes (e.g., Rennie Island, Moon Island/Bowerman Basin). Substantial acreage of fringing marshes along the lower Chehalis River were also converted to uplands through diking and dredged material disposal. Construction of the North Jetty and South Jetty resulted in profound alterations to the bathymetry of outer harbor. The jetties have in the past and continue to cause a general deepening of the harbor inlet and changes in the distribution of major morphological features (e.g., current eastward migration of Whitcomb Flats). The proposed dredging and disposal actions would occur only in previously disturbed areas, thereby maintaining the existing degraded condition.

Placement of shell on the crab mitigation plots temporarily raises the elevation of the plots by 6 inches to one foot. However, the shell tends to settle and any mounds smooth out soon after placement. Since changes are short-lived, maintenance of the plots would maintain existing bathymetric conditions.

5.2.3 Other Physical Habitat Conditions

Current patterns in the outer harbor were altered by construction of the North Jetty and South Jetty. The navigation channel likely allows ocean waters to intrude further into the harbor. This would result in increased salinities, accentuated salinity stratification, slight cooling of surface waters, and a decrease in dissolved oxygen in the outer harbor (Loehr and Collias, 1981). The proposed actions would maintain existing current patterns, salinity gradients, and water column stratification.

5.2.4 Habitat Diversity

The historic habitats of the lower Chehalis River and Grays Harbor were altered by previous dredging, diking, filling, jetty construction, industrial discharges, and other anthropogenic activities over the past 100 years. These activities resulted in the loss of wetland and other intertidal habitats, as well as the conversion of shallow water habitats to deeper water. The lower Chehalis River and inner harbor, particularly between Cosmopolis and Moon Island, is the most highly developed and industrialized portion of action area (Smith and Wenger, 2001).

Although the quantity and distribution of several habitat types has been altered, the action area does contain large areas representing a wide variety of habitats, including: deep channel (primarily man-made), shallow channel, intertidal/subtidal mudflat, eelgrass beds, intertidal/subtidal sandflat, sand islands, fringing marshes, and shell plots (man-made).

Some level of annual maintenance dredging has occurred every year since 1910, but no new areas have been dredged and no new disposal sites have been designated since the late 1990s. Only areas previously designated as channel or disposal site would be disturbed by the proposed actions. Though annual maintenance dredging does result in reduced habitat value for a variety of marine and estuarine species, the continuation of the Corps maintenance dredging program would not result in any new impacts to habitat diversity given the existing degraded condition of the navigation project area.

Creation of the crab mitigation plots altered 45 acres of intertidal mudflat habitat. The placement of shell has improved habitat value for target species (Dungeness crabs and their epibenthic prey) by providing three-dimensional structures that offer refuge from predation and desiccation, as well as attachment sites for algae and invertebrates. Placement of additional shell would maintain this baseline condition.

5.3 Biota

5.3.1 Primary Producers

The growth of eelgrass, benthic algae, and phytoplankton may be suppressed by light attenuation resulting from elevated suspended sediment concentrations associated with the proposed actions.

Disruption of water clarity may be a limiting growth factor for eelgrass. Seagrass populations can survive increased turbidity for short periods of time, but prolonged increases in light attenuation result in loss or damage of the population. Four of the ten reaches of the navigation channel—Hoquiam, North Channel, Inner Crossover, and Outer Crossover—are adjacent to broad, shallow mudflat areas where eelgrass was historically present. Dredging in Hoquiam,

North Channel, and Inner Crossover reaches typically begins in September or October, so impacts may occur during a small portion of the growing season. The extent to which dredging affects eelgrass beds in these areas is unknown. Outer Crossover dredging is less of a concern because of the sandier material present in this portion of the harbor and the use of hopper dredges. Under some tidal and weather conditions, disposal of inner harbor material at the Point Chehalis site may generate a plume of fine sediment that travels over shallow mudflat areas in North Bay. However, any resulting turbidity increase is likely not measurable compared to the relative contribution of suspended sediments from the Humptulips Basin (Thom, 1981).

Phytoplankton productivity is not significantly affected by increased turbidity that results from maintenance operations. The portions of sediment plumes resulting in the greatest turbidity increases are located in near-bottom waters, while phytoplankton photosynthesize in the upper portion of the water column. The estuary is highly dynamic and constantly flushed with oceanic waters bringing in new plankton populations. Phytoplankton have rapid replication times, so that populations can double in a day; they generally mature to reproductive life stages within three days and remain viable for days to weeks (Little, 2000).

Annual dredging of the navigation channel has occurred for nearly a century, so current baseline conditions reflect any adverse impacts that occur. The proposed actions will maintain baseline conditions.

Impacts of crab plot maintenance on eelgrass habitat is avoided through pre-placement surveys. The oyster shell provides attachment sites for macroalgae.

5.3.2 Epibenthic and Benthic Invertebrates

The benthic fauna of the navigation channel and disposal sites are subjected to frequent disturbance and stress, including frequent dredging, shipping activity, salinity fluctuations, large-scale sediment movements, and wave action. In addition to mortality of organisms in the project footprint by removal of sediments and/or burial, turbidity in the lower water column may interfere with feeding and respiratory mechanisms of benthic organisms in adjacent areas.

Several studies have found that benthic organisms recolonize dredged sites quickly, often reaching similar densities within eighteen months. However, mature equilibrium communities characteristic of similar undisturbed habitats are unlikely to establish in areas dredged as frequently as Grays Harbor. Several species characteristic of the Grays Harbor channel are opportunistic organisms, often small, tube-dwelling, surface-deposit feeders that exhibit patchy distribution patterns in space and time (Albright and Bouthillette, 1982). Similarly, benthic infauna community analysis of disposal sites have indicated a lack of deeply burrowing species as compared to control sites (SAIC, 1993). Recent Half Moon Bay nearshore disposal site samples were dominated by juvenile organisms, with a small number of adult organisms identified (SAIC, 2005).

SAIC (2005) also analyzed the stomach contents of fish captured as part of a related beach seining effort (R2 Resource Consultants, 2006). Species collected for stomach content analysis included Chinook salmon, surf smelt, sandlance, American shad, shiner perch, English sole, speckled sanddab, and sand sole. With the exception of the flatfish, there was little overlap

between the stomach contents of fish captured in Half Moon Bay and benthic organisms present there. Only English sole appeared to be feeding on benthic polychaetes derived from mid to lower tidal elevations in Half Moon Bay.

The baseline condition for benthic invertebrates in the channel and disposal sites is highly modified from natural conditions. No previously undisturbed areas will be impacted by the proposed actions, so maintenance dredging and disposal will maintain this existing condition.

Crab plot maintenance will result in mortality of organisms within the placement area. Epibenthic organisms from adjacent areas would likely colonize the areas quickly, but burrowing organisms would have difficulty re-establishing due to the change from a soft substrate to a hard substrate.

5.3.3 *Zooplankton*

Impacts of dredging and disposal on benthic communities are relatively well studied and understood as compared to impacts on zooplankton. In Grays Harbor, crustaceans are the dominant contributor to zooplankton composition based on numerical frequency of occurrence and total standing biomass (Kinney *et al.*, 1981). Crustaceans have been shown to tolerate high suspended sediment concentrations (up to 10,000 mg/l) for durations on the order of two weeks (Clarke and Wilber, 1999). Laboratory studies reviewed by Clarke and Wilber (1999) indicate that crustaceans do not exhibit detrimental responses at dosages within the realm of suspended sediment conditions associated with dredging projects. Zooplankton populations near dredging or disposal operations may be temporarily impacted by turbidity. Effects would be localized and temporary, maintaining baseline conditions.

5.3.4 *Forage Fish*

Forage fish are a critical link in the trophic structure of the action area, serving as prey for a variety of listed species in Grays Harbor. Simenstad (1981) found seven species of forage fish in Grays Harbor: Pacific herring, Pacific sand lance, Northern anchovy, surf smelt, longfin smelt, whitebait smelt, and American shad. Simenstad (1981) found the occurrence of forage fish in Grays Harbor to be highly transitory and typically related to influxes of fish into the estuary from offshore sources. The residence time of forage fish appeared to be somewhat dependent upon physical processes (e.g., passive transport via intrusion of oceanic water masses into the Harbor due to coastal upwelling). Only adult and juvenile northern anchovy, juvenile Pacific herring, and juvenile longfin smelt were consistently abundant over Simenstad's sampling period.

More recent beach seines in Half Moon Bay indicate that this portion of the action area is used extensively by a wide variety of forage fish (R2 Resource Consultants, 1999 and 2006). A comparison of the results from the two surveys indicates that species diversity and overall fish density were greater during the summer months than during the spring months (when outer harbor dredging occurs). From late June through August, juvenile Chinook salmon and juvenile/adult surf smelt were the most numerous and consistent inhabitants of Half Moon Bay. Smelt, chum salmon, coho salmon, Pacific sanddab, starry flounder and shiner perch were the species most frequently captured in April and May. Smelt dominated the total spring catch, representing over 89 percent of the total catch. Stomach content analysis of fish captured during the 2004 sampling period indicate that forage fish in Half Moon Bay consume pelagic

organisms, with very little predation on benthic organisms (SAIC, 2005). This prey preference limits the indirect effects of nearshore disposal on these species.

Most forage fish species are expected to avoid the dredging and disposal areas. However, some fish are entrained, or suctioned into the dredge with the sediment slurry, by hopper dredges. In a review of ten years (1979-1989) of entrainment data from Grays Harbor, McGraw and Armstrong (1990) identified twenty-eight species of fish in entrainment samples. Pacific sand lance were entrained at the highest rate (594 per 1000 cy dredged), followed by Pacific staghorn sculpin (92 per 1000 cy) and Pacific sanddab (76 per 1000 cy). The greatest entrainment rates and number of species occurred in the South Reach. A comparison of trawl data with this entrainment data indicates that larger crabs and some fish actively avoided the dredges. The only salmonid in this data set was one chum salmon fry entrained by a pipeline dredge in February 1981.

Outer harbor dredging could result in the loss of high numbers of sand lance, but the rate of entrainment varies by season and time of day. The maximum observed rate of entrainment (594 per 1000 cy) would not be sustained throughout the entire dredging period, if it is met at all. Entrainment rates for sand lance would be highest between dusk and dawn, as they burrow into sandy sea floor habitat at night to hide from predators then emerge to feed during daylight (Hobson, 1986). McGraw and Armstrong (1990) found that sand lance entrainment rates in Grays Harbor display some seasonality, increasing during the summer months and declining in the fall and winter. More recent outer harbor trawl data substantiates this trend, as total fish density peaked in the summer months (Striplin Environmental Associates and Dinner Marine Resources, 2000). An entrainment study on the Columbia River found that the average number of sand lance entrained was low in the month of May, increased in the summer months to a peak in August, then declined to near zero during October (Larson and Moehl, 1988). In Grays Harbor, hopper dredges are used in April, May, and occasionally June. This dredge timing would reduce the number of sand lance entrained, thereby reducing indirect effects on listed species that prey on sand lance.

No comprehensive biological studies of outer coast sand lance stocks have been undertaken (Dan Pentilla, WDFW, pers. comm.), so it is difficult to determine the effect of entrainment on the population dynamics of sand lance in Grays Harbor. A 2004 study in the Fraser River found no consistent sand lance catch rate differences between control and dredge sites before and after dredging activities, indicating that population effects are short term, with rapid recruitment into the dredged sites after disturbance (Fraser River Estuary Management Program, 2006).

Conditions for most forage fish species may be temporarily degraded by turbidity associated with dredging and disposal operations, but will likely return to baseline conditions upon completion of the maintenance work. The exception is those forage fish entrained by hopper dredges, particularly Pacific sand lance. Since outer harbor dredging occurs in the spring when entrainment rates are relatively low, dredging activities are not expected to significantly impact sand lance populations.

6. EVALUATION OF EFFECTS ON PROTECTED SPECIES

6.1 Coastal/Puget Sound Bull Trout

In 2000, USFWS requested that the Corps undertake a literature review and three year sampling effort of the reaches of the navigation channel where the bull trout in-water work closure period applies in order to establish patterns of bull trout use (USFWS, 2000). The purpose of this effort was to substantiate the then-new USFWS work window for bull trout in order to ensure the new window was fully protective of this species. Previous to this study, little information was available concerning the status of bull trout in the Chehalis River/Grays Harbor system. Most historical data is from juvenile salmon monitoring efforts that incidentally captured native char in beach seine surveys, or anecdotal accounts from sport fishermen. Fifteen historical native char captures were documented within the Chehalis River basin from 1966 through 2000 (R2 Resource Consultants, 2006).

Fish biologists from R2 Resources sampled 12 sites in 2001, 2002, 2003, and 2004 (R2 Resource Consultants, 2006). Acoustic tags were implanted in the bull trout captured in 2004, so additional data was collected in 2005. The results of the literature review and sampling effort indicate that bull trout are present in the lower Chehalis River beginning in mid- to late February and continuing through mid-July. The tagged fish appeared to display a preference for the mainstem reach of the Chehalis River between the Elliott Slough Turning Basin and Cow Point Reach.

The results of the R2 study are consistent with historical native char captures and indicate that native char are present in the lower Chehalis River beginning in early March and continuing through mid-July. A substantial body of evidence indicates that bull trout are least likely to be present in the lower Chehalis River/Grays Harbor from mid-July through the end of February, substantiating the USFWS bull trout closure period for marine waters (February 15 - July 15).

No fish tagged as part of the R2 Resources study were detected at a fixed receiver station installed in Half Moon Bay. No native char were captured during beach seines in Half Moon Bay conducted in April-May 1999 (R2 Resource Consultants, 1999) and June-August 2004 (R2 Resource Consultants, 2005).

Effects of the Proposed Actions

Bull trout do not appear to spawn in the Chehalis River basin, and probably originate from spawning populations of native char in Olympic Peninsula drainage (R2 Resource Consultants, 2006). Two of the fish tagged as part of the R2 study were recaptured in the Hoh River basin. Therefore, no effect on spawning behaviors or habitat will occur as a result of the proposed actions. The bull trout life history stages requiring the lowest fine sediment levels—spawning, incubation, and fry rearing—do not occur in the action area.

Inner harbor dredging will occur during a portion of the year when bull trout are least likely to be present in the action area, so no direct effects are expected. Inner harbor maintenance dredging is scheduled to avoid impacts on out-migrating juvenile salmon, thereby maintaining this important component of the bull trout's food base. Impacts of inner harbor dredging will therefore be insignificant.

Outer harbor dredging occurs during April and May, months when native char have been captured in the lower Chehalis River. The extent of bull trout use of the outer harbor is unknown. Ample prey resources are available in Half Moon Bay, but no native char have been identified in this area as part of R2 Resources studies described above. Effects of outer harbor dredging could include exclusion from migratory or foraging habitat as a result of reductions in water quality, and loss of prey from entrainment and/or benthic disturbance. Water quality impacts would be insignificant for three reasons. First, sediments removed from the outer harbor are primarily sands of marine origin. Heavy particles settle out of suspension rapidly, and any plumes would not be expected to disperse to adjacent areas. Second, this portion of the action area is characterized by high rates of sediment transport due to strong tidal currents and severe wave action, so large quantities of suspended sand in the water column is a typical baseline condition. Lastly, a small portion of the harbor inlet would be affected at any point in time.

As described in Section 5.3.4, the loss of prey as a result of entrainment would be insignificant. Outer harbor dredging occurs in the spring when entrainment rates are relatively low, and monitoring in the Fraser River found rapid recruitment of sand lance into dredged sites after disturbance (Fraser River Estuary Management Program, 2006).

Effects of the Proposed Actions on Designated Critical Habitat

Bull trout critical habitat for marine nearshore areas, including tidally influenced freshwater heads of estuaries, extends to the depth of -33' MLLW for the purpose of encompassing the photic zone (70 FR 56266). Within this designated marine nearshore area, there are four Primary Constituent Elements (PCEs):

PCE #1 Water temperatures that support bull trout use. Bull trout have been documented in streams with temperatures from 32 to 72 °F (0 to 22 °C) but are found more frequently in temperatures ranging from 36 to 59 °F (2 to 15 °C);

PCE #6 Migratory corridors with minimal physical, biological, or water quality impediments between spawning, rearing, overwintering, and foraging habitats, including intermittent or seasonal barriers induced by high water temperatures or low flows;

PCE #7 An abundant food base including terrestrial organisms of riparian origin, aquatic macroinvertebrates, and forage fish;

PCE #8 Permanent water of sufficient quantity and quality such that normal reproduction, growth, and survival are not inhibited

Three portions of the Grays Harbor and Chehalis River Navigation Project are located in waters below the -33' MLLW depth contour. The effects of maintenance dredging and associated disposal activities on each of the four PCEs in each of these three areas are addressed below.

South Aberdeen Reach and Elliott Slough Turning Basin. The South Aberdeen Reach has an authorized depth of -32 feet MLLW. Approximately 55,000 cubic yards of material is removed from this reach every year. This portion of the navigation project is located within the brackish-tidal freshwater transition zone of the lower Chehalis River. Native char have been captured in

this reach of the river between mid-February and mid-July. No dredging occurs during the portion of the year when native char are most likely to be present in the lower Chehalis River.

The Elliott Slough Turning Basin is located within the South Aberdeen Reach. It has an authorized depth of -32 to -35 feet MLLW. Approximately 60,000 cubic yards of material is removed from the turning basin every other year. The turning basin is located at a bend in the river, so shoaling rates vary within the basin. The inner curve tends to shoal more heavily and is generally the focus of dredging efforts. The turning basin does not occupy the entire width of the river channel. Corridors of more shallow waters are present on both sides of the basin; these areas are not dredged.

The proposed action is not expected to have a measurable effect on water temperature (PCE #1). Dredging activities do result in a short-term degradation in water quality by decreasing dissolved oxygen levels, increasing suspended sediment concentrations in the water column, and resuspending any contaminants buried in accumulated sediments. These water quality impacts could impede bull trout movement through this foraging area if dredging occurred while bull trout were in the action areas. Since dredging in this reach and basin are scheduled to occur when bull trout are least likely to be present in the lower Chehalis, the proposed action would have an insignificant effect on migratory corridors (PCE #6). In addition, the proposed action would have only short-term, non-measurable effects to water quality, as described above (PCE #8).

Common fish species in the South Aberdeen Reach during the period of bull trout residence include shiner perch, Chinook salmon, Pacific staghorn sculpin, threespine stickleback, peamouth chub, and chum salmon (R2 Resource Consultants, 2003). Availability of prey is not known to be a limiting factor for bull trout in this area. Maintenance dredging in this reach and basin is scheduled to avoid impacts on out-migrating juvenile salmon, thereby maintaining this important component of the bull trout's food base. The proposed action would not preclude bull trout from feeding nor affect the availability of prey. Maintenance dredging of this reach would have an insignificant effect on bull trout critical habitat with respect to the food base (PCE #7).

Half Moon Bay Nearshore Nourishment Disposal Site. The depth of the Half Moon Bay Nearshore Nourishment Disposal Site ranges between -10 and -25 feet MLLW. This site is a beneficial use disposal site where material is placed for the purpose of reducing erosion rates in Half Moon Bay. Only sandy material from the Bar, Entrance, South Reach, and Outer Crossover channels is placed in this site. The navigation channel is deeper than -33 feet MLLW in these reaches. Dredging and placement occurs in April or May, months when native char have been captured in the lower Chehalis River.

This disposal site is dispersive, meaning that material is carried to other areas by currents rather than mounding. Over 2 million cubic yards of sand has been placed in this disposal site since 1994, generally between 200,000 and 400,000 cubic yards annually or every other year. Despite all of this material being placed, Half Moon Bay continues to deepen. Without placement in this disposal site, much of Half Moon Bay could deepen beyond -33 feet MLLW and no longer meet the elevation requirement of critical habitat for bull trout.

The proposed action would not reduce the depth of Half Moon Bay to the extent that tidal flushing would be reduced or solar heating would affect water temperatures, so disposal activities would not have a measurable effect on PCE #1 or PCE #8.

Disposal activities would temporarily degrade water quality during, and immediately following, discharge events. Given the large grain size of the material discharged within this site, impacts to turbidity levels and dissolved oxygen levels would be minor and very short-lived. The strong currents in this area transport large quantities of sand, so the bottom of the water column commonly holds high levels of suspended sands. Material dredged from the outer reaches of Grays Harbor is composed of clean ocean sands, so resuspension of contaminants is not a concern. Degradation of water quality associated with disposal activities would be localized to a small portion of the Grays Harbor entrance. Effects on bull trout migratory corridors (PCE #6) would be insignificant.

Half Moon Bay provides habitat for a variety of fish species, including smelt, Pacific herring, starry flounder, shiner perch, sand lance, northern anchovy, Pacific sanddab, lingcod, redbelt surfperch, sand sole, threespine stickleback, and Pacific staghorn sculpin (R2 Resource Consultants, 1999). Salmonids, including Chinook, coho, and chum salmon are also known to utilize Half Moon Bay. Use of the Half Moon Bay Nearshore Disposal site will not impact forage fish spawning habitat, or negatively affect bull trout foraging close to the Half Moon Bay shoreline. Effects on the food base (PCE #7) would be insignificant.

Determination of Effect

The Corps effect determination for the proposed actions is **may affect, not likely to adversely affect** bull trout and their designated critical habitat. Bull trout are highly unlikely to be in the action area during inner harbor dredging, the project element most likely to affect bull trout because of the larger portion of the migratory pathway affected by dredging. Effects to the bull trout prey base are expected to be insignificant. There would be no effects to spawning habitat or behaviors.

6.2 Western Snowy Plover

Damon Point, located approximately 9,000 feet north of Entrance Reach and the South Jetty disposal site, is a snowy plover breeding site and has been designated as critical habitat (USFWS, 1999). Vegetation density and recreational use are likely limiting factor for nest site placement on Damon Point (WDFW, 1995). During nesting season, plovers in the area generally forage on natural dunes along the ocean beaches and on ephemeral sand spits within the Oyhut Wildlife Area (Richardson, 1999). Plovers are not known to over-winter on Damon Point or within the Oyhut Wildlife Area (USFWS, 1999).

Effects of the Proposed Actions

The proposed work would have no effect on the snowy plover's intertidal prey resources. Dredging and disposal would occur far enough from Damon Point and the Oyhut Wildlife area that noise disturbance is not a concern, so potential effects to nesting behavior would be discountable.

Dredging and disposal operations are not anticipated to affect sediment transport and disposition patterns related to shoreline position at Damon Point. Shoreline change at Damon Point is associated with North Beach sediment bypassing the North Jetty (Corps, 2003).

Crab plot maintenance would have no effect on this species.

Determination of Effect

The Corps effect determination for the proposed actions is **may affect, not likely to adversely affect**. Effects to plover foraging and nesting habitat are not anticipated. Potential noise disturbance effects are improbable. The proposed actions **may affect, not likely to adversely affect** designated Western snowy plover critical habitat.

6.3 Brown Pelican

Juvenile and adult brown pelicans are present in Grays Harbor from May to October, peaking in August. Two sites in the harbor—Sand Island in North Bay and the Westport Harbor breakwater—are used for communal night roosting (Jaques and O’Casey, 2006). Twelve well-dispersed sites, including the South Jetty, are used as diurnal roosts (Jaques and O’Casey, 2006). Pelicans have been noted feeding in Half Moon Bay and in the vicinity of the South Jetty. Increasing numbers of pelicans have occurred in Grays Harbor since 1998, with a high of about 5,000 birds in 2005 (Jaques and O’Casey, 2006).

Effects of the Proposed Actions

Outer harbor dredging occurs in April and May (occasionally June in South Reach), the period when pelicans begin to arrive in Grays Harbor. Use of the Pt. Chehalis and South Jetty disposal sites occurs during inner harbor dredging, which generally begins in September or October.

Noise associated with dredging and disposal operations may result in localized, temporary disruptions to foraging in areas near the navigation channel and disposal sites. Pelicans appear to be habituated to boat activity in the harbor, showing no response to vessels unless within 30 meters or traveling fast and/or erratically (Jaques and O’Casey, 2006). During a recent survey in Grays Harbor, most disturbance at roosting sites was attributed to presence of bald eagles; disturbance caused by natural sources was twice as frequent as disturbances from anthropogenic sources (Jaques and O’Casey, 2006). Effects of disturbance on non-breeding pelicans are not as significant as effects during the breeding season, because the pelicans are not restricted to a limited geographic area as they are during the breeding season (Gress and Anderson, 1983).

No diurnal or night roost areas would be significantly affected by dredging and disposal activities. Pump-off of dredged material for transport to the Half Moon Bay direct beach nourishment disposal site occurs near the Airport Spit diurnal roost site (>1000 feet) and Westport harbor breakwater night roost area (~500 feet). However, the potential for disturbance is low since rapid movement appears to contribute to pelican disturbance in the area more than noise (see paragraph above). Pump-off associated with placement of material at the Half Moon Bay direct beach nourishment site would occur only once during the five-year term of this PBE. During the last pump-off event in 2002, the operation lasted 5 weeks. The contractor worked 24 hours a day, but the docking of the dredge at Firecracker Point occurred 4 times a day and it took

2.5 to 3 hours to pump-off each load of sand. Maintenance dredging is not thought to be a major contributor to the erosion and eastward migration of Whitcomb Flats, another of the diurnal roost sites in the harbor. Although maintenance dredging does contribute to the deepening of the outer harbor at a local scale, the most significant factor affecting large scale changes to the inlet's geomorphology is the jetties (Osborne, 2003).

Since brown pelicans forage by sight, any increases in turbidity could result in reduced foraging success in the vicinity of dredging operations. Prey items may experience a parallel reduction in the visibility of prey, and are expected to avoid any turbidity plumes. Any reduction in the availability of food would be highly localized and would subside rapidly upon completion of the dredging and disposal operations. As discussed in Section 5.3.4, dredging and disposal operations are not expected to result in a long-term reduction in the abundance and distribution of forage fish and other prey.

Crab plot maintenance would have little or no effect on brown pelicans.

Determination of Effect

The Corps effect determination for the proposed actions is **may affect, not likely to adversely affect**. Any noise disturbance or impacts to foraging success would be discountable due to their temporary nature and localized occurrence in relation to this species' foraging range. Impacts to the prey base and roost sites are expected to be insignificant.

6.4 Marbled Murrelet

Marbled murrelets are generally present in Grays Harbor during the fall, winter, and spring, (Speich and Wahl, 1995). Sightings are rare during the nesting season (May-September). The highest numbers occurred in habitats close to shore, generally out to the 50 meter depth contour. Murrelets are commonly seen in the navigation channel (Speich and Wahl, 1995). No designated critical habitat is located in or along the shoreline of Grays Harbor.

Effects of the Proposed Actions

The proposed actions would have no effect on murrelet nests, nesting habitat, or nesting season foraging behaviors. Outer harbor dredging (April-June) and disposal of material dredged from the inner harbor activities (September-February) would occur in and adjacent to foraging habitat. Some disturbance to prey items and foraging behaviors can be expected.

Noise produced by dredge vessels may disturb foraging murrelets. Dredges generally move very slowly, and typically only one operates at a time. The effects of anthropogenic disturbance on murrelets at sea are not well documented, but murrelets have been shown to habituate to heavy levels of boat traffic (Strachan *et al.*, 1995).

Increases in turbidity associated with maintenance work could reduce visibility in the immediate vicinity of dredging activities, thereby reducing foraging success for any murrelets that remain in the area. This effect would be highly localized and subside rapidly upon completion of the dredging and disposal operations. Marbled murrelets are relatively opportunistic foragers; they have flexibility in prey choice, which likely enables them to respond to changes in prey

abundance and location (USFWS, 1996). This indicates that if murrelets are present in the immediate vicinity of maintenance activities, and they are disturbed while foraging, they would likely move without significant injury.

As described in Section 5.3.4, the loss of prey as a result of entrainment would be insignificant. Outer harbor dredging occurs in the spring when entrainment rates are relatively low, and monitoring in the Fraser River found rapid recruitment of sand lance into dredged sites after disturbance (Fraser River Estuary Management Program, 2006).

Crab plot maintenance occurs in an area east of the typical murrelet distribution in Grays Harbor, and would have little or no effect on this species.

Determination of Effect

The Corps effect determination for the proposed actions is **may affect, not likely to adversely affect**. The proposed actions will have no effect on nests or nesting habitat. Any disruption to foraging activities and the murrelet prey base are expected to be insignificant, since they would be highly localized relative to this species' foraging range. The proposed project will have **no effect** on marbled murrelet designated critical habitat, as none occurs within the action area.

6.5 Bald Eagle

Bald eagle sightings are most frequent during the winter months, as Grays Harbor provides important bald eagle winter feeding habitat. Anadromous fish returning to spawn, waterfowl, and shorebirds are the primary prey items in the estuary. Eagles tend to congregate near the mouths of the Humptulips, Elk, Johns, and Hoquiam rivers, and near Newkah Creek and Charley Creek. Bald eagles prey on the shorebirds and waterfowl that congregate in the Oyhut Wildlife Recreation Area and on Damon Point.

A query of the Washington Department of Fish and Wildlife Priority Habitats and Species database and the Washington Department of Natural Resources Wildlife Heritage Points database indicated that 15 bald eagle nests are located near the shores of the harbor and the lower Chehalis River. The nest closest to the navigation channel is near the north shore of the Harbor east of Point New, approximately 1.5 miles north of the navigation channel.

Effects of the Proposed Actions

Dredging and disposal operations would extend throughout the course of 5 years, so activities would occur during both the bald eagle wintering and nesting seasons. However, various reaches will be dredged during different times of the year. Dredging in North Channel and Inner Crossover Reach, where equipment will be operating in closest proximity to eagle habitats, generally occurs between September and February. Although activities will occur during a portion of the nesting season (first 45 days), it is unlikely that the noise associated with maintenance operations would disrupt eagle nesting and rearing of young due to the distance of nests and the navigation project (USFWS, 1999). Crab mitigation plot maintenance occurs in the spring, generally March or April. No impacts to nesting activities are anticipated.

Inner harbor dredging would occur through most of the wintering season, but no communal night roosts or perch trees would be physically disturbed by dredging activities. Foraging bald eagles may be displaced by the noise of heavy equipment, but dredging will not occur near any preferred foraging areas nor will the availability of prey will be significantly disrupted by project construction. Any eagles in the area would be somewhat accustomed to high levels of human activity in and near the channel. Eagles tend to tolerate more disturbance at feeding sites than in roosting areas (Steenhof, 1978).

Determination of Effect

The Corps effect determination for the proposed actions is **may affect, not likely to adversely affect**. This determination is based on the lack of nests and communal night roosts in the immediate vicinity of the navigation channel, disposal sites, and crab mitigation plots. While dredging activities have the potential to temporarily disrupt feeding opportunities in a localized area, this project would not alter the long-term food base.

6.6 Southern Green Sturgeon

The Southern green sturgeon spawns in the Sacramento River; adults migrate into the river to spawn between April to July. Juveniles spend 1 to 4 years in freshwater before migrating to the ocean. During the late summer they concentrate in coastal estuaries, particularly the Columbia River estuary, Willapa Bay, and Grays Harbor (Moyle *et al.* 1992, as cited in Adams *et al.* 2002). Adult green sturgeon are common in the seawater and mixing zones of Grays Harbor during high salinity periods, with the highest abundances from July through early October (Monaco *et al.* 1990). The species is not known to utilize the lower Chehalis River at any time (Deschamps *et al.* 1971).

Effects of the Proposed Actions

Due to the lack of spawning habitat in the Chehalis Basin and juvenile life history characteristics, the proposed actions will have no impact on juvenile green sturgeon or spawning. Most dredging does not occur during periods when green sturgeon are present in Grays Harbor, so direct interactions with operating dredges will be limited to the beginning of inner harbor dredging season in September and October. One clamshell dredge is used to conduct this portion of maintenance activities, so harassment due to noise and dredge/disposal induced reductions in water quality will be limited in spatial extent. Adult sturgeon are mobile enough to avoid burial by disposal plumes.

Prey resources may be lost due to entrainment and habitat disturbances associated with the proposed actions. Green sturgeon are opportunistic predators that eat a variety of prey and switch foods as prey availability changes (Turner 1966). Sturgeon generally feed on benthic invertebrates, such as shrimp, crabs, worms, mollusks, and epibenthic crustaceans. Adult green sturgeon caught in Washington had preyed on sand lance and callinassid shrimp (P. Foley, University of California, Davis, unpublished data, as cited in Moyle *et al.* 1992). Impacts to prey resources would be most acute in the outer harbor, where sand lance and Dungeness crab populations are impacted by hopper dredge entrainment and mortality of other benthic organisms occurs during dredged material disposal. As described in Section 5.3.4, the loss of prey as a result of entrainment would be insignificant. Outer harbor dredging occurs in the spring when

entrainment rates are relatively low, and monitoring in the Fraser River found rapid recruitment of sand lance into dredged sites after disturbance (Fraser River Estuary Management Program, 2006). Effects to the sturgeon prey base would be discountable given the small portion of their foraging range impacted and the wide variety of prey utilized by this species.

Crab plot mitigation maintenance may result in mortality to burrowing shrimp which are potential prey items for green sturgeon. However, the shell plots were located to avoid major beds of ghost shrimp (*Neotrypaea californiensis*) and mud shrimp (*Upogebia pugettensis*) because the sediment destabilization caused by their burrows negatively affects oyster shell longevity. Given the small area to be affected and low numbers of shrimp within the plots, any potential effects would be discountable.

Determination of Effect

The Corps effect determination for the proposed actions is **may affect, not likely to adversely affect** since most dredging occurs outside the time period that green sturgeon inhabit Grays Harbor. Disruptions to prey resources are expected to be insignificant.

6.7 Eastern Steller Sea Lion

Steller sea lions may be observed along the Washington coast year round but they are least abundant in May-July, which corresponds to the breeding season (Gearin and Jeffries 1996). No breeding rookeries have been identified in Washington waters (WDFW 1993). The majority of Washington's Steller sea lion haul-out sites are located at large rock complexes along the northern outer coast. Grays Harbor has several documented haul-out areas used regularly by harbor seals, but there is no indication that these sites are used regularly by Steller sea lions (Jeffries *et al.* 2000). No designated critical habitat is located in Washington State.

The diet of Steller sea lions occurring in Washington is not well known, although they appear to be largely opportunistic feeders (Gearin and Jeffries 1996). Examination of scat and stomach contents indicate Pacific whiting (hake), rockfish, cod, pollock, herring, and smelt are frequent prey items (Gearin and Jeffries 1996). For the most part, Steller sea lions are not known to prey significantly on bottom-dwelling invertebrates, although crabs and shrimp have been noted to compose a small portion of the food items consumed in Alaska.

Effects of the Proposed Actions

The proposed actions would have no effect on breeding habitat, breeding behavior, or haul-out areas. Noise associated with dredging, disposal, and shell placement may have an effect on foraging behavior. Short-term impacts of any sound disturbance related to construction activities would likely result in displacement of animals rather than injury.

Increases in turbidity associated with maintenance dredging could reduce visibility in the immediate vicinity of dredging activities, thereby reducing foraging success for any animals in the area. Any reduction in availability of food would be highly localized, particularly with respect to this species' foraging range, and would subside rapidly upon completion of the dredging and disposal operations. Habitats for groundfish and other benthic prey items would be affected by dredging and dredged material disposal (see Sections 5 and 8). However, effects to

the Steller seal lion prey base would be discountable given the small portion of their foraging range impacted and the wide variety of prey utilized by this species.

Determination of Effect

The Corps effect determination for the proposed actions is **may affect, not likely to adversely affect** since the potential for significant sound disturbance or impacts to water quality and prey abundance will be minimal. The proposed actions will have **no effect** on designated critical habitat.

6.8 Southern Resident Killer Whale

Although killer whales are intensely studied in the inside waters of the Pacific Northwest, little is known about their use of outside waters, the area where they may spend large portions of their lives (Calambokidis *et al.* 2004). During the spring, summer, and fall, the Southern resident stock is usually found in the inland waterways of Puget Sound, the Strait of Juan de Fuca, and the Southern Georgia Strait. However, they have also been documented in the coastal waters of Washington during these seasons. Little is known about the winter movements and range of the Southern Resident stock, although Balcomb (2006) found that all three pods of the Southern Residents tend to stay in Puget Sound and lower Georgia Strait through early winter (December). By January, they have moved to the coast of Washington and south to central California. In mid-February, they begin a northward migration and are back to Washington and British Columbia waters in March.

Southern Resident killer whales have been sighted three times in the vicinity of Grays Harbor since 1986 (Krahn *et al.* 2004). These sightings occurred in March and April; outer harbor dredging occurs in April and May. The distribution of this stock is strongly linked to the availability of prey, the primary item being Chinook salmon. Spring and fall Chinook are present in the action area. Peak river entry timing for spring Chinook is January and February, and October for fall Chinook (WDFW *et al.* 1994).

Effects of the Proposed Actions

Potential effects to killer whales involve possible sound disturbance caused by vessel operations and potential impacts to their prey base. Any whales in the area would not be subject to heavy levels of disturbance, as one dredge generally operates at any given time. The low-frequency noise made by operating hopper dredges would not mask orca calling and echolocation, which occur at much higher frequencies (Clarke *et al.* 2002 and Talus, 2000). Dredge vessels are slow-moving and would not pursue the whales. Any impacts resulting from noise disturbance would be short-term (~30 days per year) and would likely result in temporary displacement of animals rather than injury.

The potential for toxic effects of contaminants resuspended in the water column during dredging and disposal is minimal. As described in Section 5.1.3, Grays Harbor sediments have been determined to be suitable for unconfined open water disposal through a series of physical, chemical and biological testing procedures. Killer whale preference for pelagic prey limits the indirect effects of dredging and disposal in this species' prey base.

Determination of Effect

The Corp's effect determination is **may affect, not likely to adversely affect** since any effects of sound disturbance or impacts to the killer whale food base would be discountable. Proposed critical habitat is not located within the action area, so there will be **no effect** to critical habitat.

6.9 Humpback Whale

Based on aerial and shipboard surveys between 1975 and 1994, humpbacks are the second most abundant large whale off of Washington and Oregon (Barlow et al., 1997). The summer distribution of humpbacks is linked to local distribution of prey, which is driven by physical oceanographic conditions; factors such as upwelling and converging currents, which are characteristic of fjords, channels, continental shelves, offshore banks, and the edges of continental shelves, affect the abundance and availability of prey items (NMFS, 1991). Calambokidis et al. (2004) found humpbacks concentrated to the west and southwest of the Strait of Juan de Fuca entrance, between Juan de Fuca Canyon and the outer edge of the continental shelf.

Effects of the Proposed Actions

Potential effects to humpbacks involve possible sound disturbance caused by vessel operations and potential impacts to their prey base. Noise disturbance is unlikely since humpbacks are present in Washington coastal waters during the summer, and most dredging occurs in the spring and fall. Shell placement of the crab mitigation plots occurs in the spring. Humpbacks could be present in or off Grays Harbor during the beginning of inner harbor dredging, so the potential for disturbance would be limited to disposal of material at the Pt. Chehalis and South Jetty sites. Under normal circumstances, one dredge operates at a time so any whales in the area would not be subject to heavy levels of disturbance. No dredge vessels would operate outside the harbor (in the Bar Channel or 3.9 mile disposal site) during inner harbor maintenance. Whale responses to sound disturbance may include avoidance, startle, annoyance, and slowed rate of travel (Calambokidis *et al.*, 1987). Impacts would be short-term and would likely result in temporary displacement of animals rather than injury.

As discussed in Section 5.3.4, dredging and disposal operations are not expected to result in a long-term reduction in the abundance and distribution of prey items. Any reduction in availability of food would be localized with respect to this species foraging range, and would subside upon completion of the dredging and disposal operations. The potential for long-term or indirect impacts of the proposed work to humpbacks is minimal.

Determination of Effect

The Corp's effect determination is **may affect, not likely to adversely affect** since any effects of sound disturbance or impacts to prey abundance would be discountable.

6.10 Other Marine Mammals and Sea Turtles

Evidence suggests that the remainder of the species listed in Table 2 are not likely to occur in the action area. Although blue whales feed on the continental shelf off of Washington and Oregon during the summer months, the species is most abundant off the coast of California (Reeves *et al.*, 1998a). North Pacific Fin whale concentrations generally form along frontal boundaries or mixing zones between coastal and oceanic waters; no regular occurrences off the coast of Washington have been noted (Reeves *et al.* 1998b). Sei whales inhabit areas along the continental slope and rarely enter semi-enclosed marginal seas or gulfs (Reeves *et al.*, 1998b). Sperm whales are frequently present off the coast of Washington; however, they typically inhabit deep waters and seldom venture close to coastal areas (Barlow *et al.*, 1997). The preferred habitat for all of these whale species is the open ocean, not coastal waters.

Leatherback turtle nesting grounds occur between 40°N and 35°S (Plotkin 1995); therefore, no nesting areas are located in Washington. This species may use oceanic areas off the coast of Washington as foraging grounds during the summer and fall months. Aerial surveys indicate that when off the U.S. Pacific coast, leatherbacks usually occur in continental slope waters (NMFS and USFWS 1998a). The nesting areas of Loggerhead turtles are located in the subtropics, primarily in the western Pacific (NMFS and USFWS 1998b). Eastern Pacific waters may be used as foraging grounds and migratory corridors; however, sightings in this area were confined to the summer months off of southern California (NMFS and USFWS 1998b). Primary nesting sites for the Green turtle are located in Mexico and the Galapagos Islands, although a resident population is also present in San Diego Bay (NMFS and USFWS 1998c). Beach strandings and gillnet captures were documented off the Washington coast, but it has been suggested that these individuals were vagrants that strayed northward with El Nino currents (NMFS and USFWS 1998c). No regular occurrences off the coast of Washington were noted in a 1998 draft recovery plan for this species. Olive Ridley turtles occur in tropical and warm temperate ocean waters. Eastern Pacific populations nest in southern Mexico and northern Costa Rica (NMFS and USFWS 1998d). There is evidence that they undergo regular migrations from breeding areas to feeding areas in the south; however, El Nino events may cause Olive Riddleys to migrate northward, where they “cold stun” once they encounter colder water (NMFS and USFWS 1998d).

Determination of Effect

Given the distributions of these marine mammals and sea turtles, combined with their high mobility, the Corps has determined that the proposed actions will have **no effect** on these species.

7. EFFECT DETERMINATION SUMMARY

Table 3 below summarizes the Corps effect determinations for continuation of the Grays Harbor and Chehalis River navigation project maintenance program.

Table 3. Effect Determination Summary

SPECIES	LISTING STATUS	EFFECT DETERMINATION	CRITICAL HABITAT DETERMINATION
Coastal/Puget Sound Bull Trout <i>Salvelinus confluentus</i>	threatened	not likely to adversely effect	not likely to adversely effect
Western Snowy Plover <i>Charadrius alexandrius nivosus</i>	threatened	not likely to adversely effect	not likely to adversely effect
Brown Pelican <i>Pelecanus occidentalis californicus</i>	endangered	not likely to adversely effect	—
Marbled Murrelet <i>Brachyramphus marmoratus</i>	threatened	not likely to adversely effect	no effect
Bald Eagle <i>Haliaeetus leucocephalus</i>	threatened	not likely to adversely effect	—
Southern Green Sturgeon <i>Acipenser medirostris</i>	threatened	not likely to adversely effect	—
Eastern Stock Steller Sea Lion <i>Eumetopias jubatus</i>	threatened	not likely to adversely effect	no effect
Southern Resident Killer Whale <i>Orcinus orca</i>	endangered	not likely to adversely effect	no effect
Humpback Whale <i>Megaptera novaeangliae</i>	endangered	not likely to adversely effect	—
Blue Whale <i>Balaenoptera musculus</i>	endangered	no effect	—
Fin Whale <i>Balaenoptera physalus</i>	endangered	no effect	—
Sei Whale <i>Balaenoptera borealis</i>	endangered	no effect	—
Sperm Whale <i>Physeter macrocephalus</i>	endangered	no effect	—
Leatherback Sea Turtle <i>Dermochelys coriacea</i>	endangered	no effect	no effect
Loggerhead Sea Turtle <i>Caretta caretta</i>	threatened	no effect	no effect
Mexican Nesting Green Sea Turtle <i>Chelonia mydas</i>	endangered	no effect	no effect
Mexican Nesting Olive Ridley Sea Turtle <i>Lepidochelys olivacea</i>	endangered	no effect	no effect

8. ESSENTIAL FISH HABITAT

The Magnuson-Stevens Sustainable Fisheries Act requires Federal agencies to consult with the National Marine Fisheries Service (NMFS) regarding actions that may affect Essential Fish Habitat (EFH) for Pacific coast groundfish, coastal pelagic species, and Pacific salmon. The Act defined EFH as “those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity.” EFH is the habitat (waters and substrate) required to support a sustainable fishery and a managed species’ contribution to a healthy ecosystem. Waters include aquatic areas and their associated physical, chemical, and biological properties that are used by fish. Substrate includes sediment, hard bottom, structures underlying the waters, and associated biological communities.

The action area previously described in this document is part of the Washington State Estuarine EFH composite, and has been designated as EFH for various life stages of 24 species of groundfish, five coastal pelagic species, and two species of Pacific salmon according to the NMFS Fisheries Management Plans (PFMC 1998, PFMC 2003, PFMC 2004).

Effects of the Proposed Actions on EFH

The proposed action may impact EFH of Pacific coast groundfish, coastal pelagic species, and Pacific salmon by:

- reducing the suitability of the navigation project footprint for settlement and recruitment of early life history stages;
- entraining substantial numbers of fishes, such as Pacific sanddab and sandlance;
- affecting fish and their prey resources through temporary decreases in dissolved oxygen;
- reducing the quality of habitats adjacent to the navigation project footprint through temporary increases in turbidity; and
- reducing the availability of prey resources through disturbance to the benthic invertebrate community.

The Corps has determined that the proposed actions **may adversely impact** EFH.

Conservation Measures

The Corps has incorporated the following conservation measures into the proposed actions to reduce potential impacts to EHF:

- The current dredging schedule is the result of years of coordination between resource agencies and the Corps. It reflects consensus regarding the times of year when dredging would have the least impact on important commercial fisheries (Dungeness crab), species protected under the Endangered Species Act (bull trout) and Washington Hydraulic Code (juvenile salmonids), as well as human safety.
- Clamshell dredges are used to the maximum extent practicable to reduce entrainment impacts. Normal sea conditions prevent the safe use of clamshell equipment in the outer reaches of the navigation channel.

- All provisions of the Washington Department of Ecology's Section 401 Water Quality Certification and the Washington Department of Fish and Wildlife's Hydraulic Project Approval (HPA) are implemented to minimize turbidity and dissolved oxygen impacts, as well as impacts to commercially important species.
- Only previously disturbed areas will be impacted by the proposed action; no new dredging or disposal sites are proposed. Much care has been taken during the formulation of the proposed project to reduce dredging amounts to the very least possible.
- Sediments have been tested for contaminants and approved for unconfined open water disposal under the guidelines of the Dredged Material Management Program (DMMP) administered by the Corps, Environmental Protection Agency, Washington Department of Ecology, and Washington Department of Natural Resources.
- Beneficial use disposal of dredged materials occurs to the maximum extent practicable. Three of the project's six disposal sites are beneficial use sites—Half Moon Bay nearshore, Half Moon Bay direct beach nourishment (mitigation stockpile), and South Beach nearshore.

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Appendix E
Agency Approval Letters



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Northwest Region
7800 Sand Point Way N.E., Bldg. 1
Seattle, WA 98115

October 2, 2006

NMFS Tracking No.:
2006/03926

Mark T. Ziminske, Chief
Environmental Resources Section
Seattle District Corps of Engineers
P.O. Box 3755
Seattle, Washington 98124-3755

OPTIONAL FORM 99 (7-90)

FAX TRANSMITTAL

To	KEN Brunner	From	Dan Guy
Dept./Agency		Phone #	
Fax #	206 764 4470	Ext #	
NSN 7540-01-317-7308		5099-101 GENERAL SERVICES ADMINISTRATION	

RE: Endangered Species Act Section 7 Informal Consultation and Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Consultation for the Grays Harbor/Chehalis River Navigation Project, Grays Harbor County, Washington (HUC 1710010503)

Dear Mr. Ziminske:

This correspondence is in response to your request for consultation under the Endangered Species Act (ESA). Additionally, this letter serves to meet the requirements for consultation under the Magnuson-Stevens Fishery Conservation and Management Act (MSA section 305(b)).

Endangered Species Act

The National Marine Fisheries Service (NMFS) has reviewed your August 9, 2006 request for consultation, as well as the follow-up information. The U.S. Army Corps of Engineers (COE) has made the determination of "may affect, not likely to adversely affect" for the following species: Southern green sturgeon (*Acipenser medirostris*) and Steller sea lion (*Eumetopias jubatus*) which are listed as threatened under the ESA and Southern resident killer whale (*Orcinus orca*) and Humpback whale (*Megaptera novaeangliae*) listed as endangered under the ESA. This consultation with the COE is conducted under section 7(a)(2) of the ESA, and its implementing regulations, 50 CFR Part 402.

According to the Biological Evaluation (BE), the COE proposes to continue navigation maintenance dredging operations in Grays Harbor from October 2006 thru 2011. Dredging will occur in the authorized deep draft Federal Channel. Dredging operations will occur with both clam shell dredge and suction dredging. The clam shell dredge will be used at times and locations to reduce impacts to listed species and/or their food web prey base. Dredge disposal will occur at six existing dredge disposal sites. The timing of dredge operations will occur at times to minimize conflicts with listed species.



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Additional conservation measures include the use of clam shell dredging in the inner harbor reaches to avoid entrainment of fish, shrimp, and crabs, all prey base species for Southern green sturgeon. Water quality monitoring occurs when flows drop below 100 cubic feet per second at Hoquiam and dredging ceases when dissolved oxygen (DO) levels fall below 4 mg/L. Disposal at Half Moon Bay nearshore disposal site is restricted to above +9 feet MLLW, pursuant to the Point Chehalis Revetment Extension Mitigation Agreement. Additional conservation measures are also instituted for species not subject to this consultation.

Species Determination

NMFS has analyzed the potential impacts of the proposed action on the above-listed species and has determined that the effects will be insignificant and discountable for the following reasons:

1. Southern green sturgeon: most dredging would occur in the lower salinity reaches less likely to be inhabited by sturgeon; the spatial extent of the disposal sites is quite small considering the total subtidal area of the estuary an sturgeon mobility; sand lance and shrimp entrainment, sturgeon food base species, is not a concern during inner harbor dredging because a clamshell dredge is used for that work; sturgeon entrainment is not a concern because hopper dredges are used in the spring when Southern green sturgeon have not been noted and only larger sturgeon are known to be present at certain times in Grays Harbor. Indirect effects on the sturgeon prey base are insignificant given the small portion of the harbor impacted by the project and the wide variety of prey utilized.
2. Steller sea lion: The proposed action would have no effect on breeding habitat, breeding behavior, or haul-out areas. Noise associated with dredging or disposal may have some minor effect on foraging behavior, however, these short-term disturbances will likely result in relocation. Increase in turbidity would, likewise, result in temporary relocation of the animal during feeding forays. Impacts of sound disturbance, water quality, and prey abundance will be insignificant.
3. Southern resident killer whale: While this Puget Sound species would not likely be in coastal waters during most of the proposed activity timing it is known in coastal waters during the month winter months, (January). Any disturbances from the low-frequency noises of operating hopper dredges would not mask orca calling or echolocation. Slow moving dredges would not impact whale movement or migration back to Puget Sound. Killer whale preference for pelagic prey limits the indirect effects of dredging and disposal in on this species' prey base. The impacts this action on Southern resident killer whales would be discountable.
4. Humpback Whale: Potential effects to humpbacks involve sound disturbance from operating dredge vessels. Noise disturbances are unlikely, however, since

humpbacks are present in Washington's coastal waters during summer months while dredging activities will be occurring in the late fall and spring. The likelihood of sound disturbance is discountable.

Therefore, NMFS concurs with the effects determination of "may affect, not likely to adversely affect," for these ESA listed species.

Critical Habitat Determination

There is no Critical Habitat Designation for these species in the action area.

This concludes informal consultation pursuant to the regulations implementing the ESA, 50 CFR 402.10. This project should be reinitiated if new information reveals effects of the action that may affect listed species or critical habitat in a manner or to an extent not considered in this consultation. The project should also be reinitiated if the action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in this consultation, and/or if a new species is listed or critical habitat for another species is designated that may be affected by this project.

Magnuson-Stevens Fishery Conservation and Management Act

Federal agencies are required, under section 305(b)(20) of the Magnuson-Stevens Fishery Conservation and Management Act (MSA) and its implementing regulations (50 CFR 600 Subpart K), to consult with NMFS regarding actions that are authorized, funded, or undertaken by that agency that may adversely affect Essential Fish Habitat (EFH). The MSA (section 3) defines EFH as "those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity". If an action would adversely affect EFH, NMFS is required to provide the Federal action agency with EFH conservation recommendations (MSA section 305(b)(4)(A)). This consultation is based, in part, on the information provided by the Federal agency and descriptions of EFH for Pacific coast groundfish, coastal pelagic species, and Pacific salmon contained in the Fishery Management Plans developed by the Pacific Fishery Management Council and approved by the Secretary of Commerce.

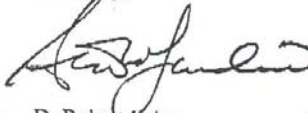
The proposed action is described in the BE submitted by the COE. The project area includes habitat in Grays Harbor which has been designated as EFH for various life stages of 18 species of groundfish, five species of coastal pelagics, and two species of Pacific salmon (Table 1, Enclosure).

EFH Conservation Recommendations: Because the conservation measures that the COE included as part of the proposed action to address ESA concerns are also adequate to avoid, minimize, or otherwise offset potential adverse impacts to the EFH of the species in Table 1, conservation recommendations pursuant to MSA (section 305(b)(4)(A)) are not necessary. Since NMFS is not providing conservation recommendations at this time, no 30-day response from COE is required (MSA section 305(b)(4)(B)).

This concludes consultation under the MSA. If the proposed action is modified in a manner that may adversely affect EFH, or if new information becomes available that affects the basis for NMFS' EFH conservation recommendations, the COE will need to reinstitute consultation in accordance with the implementing regulations for EFH at 50 CFR 600.920(k).

The efforts by the COE to design this project to minimize environmental impacts are appreciated. If you have any questions, please contact Dan Guy, of my staff, at (360) 534-9342 or Dan.Guy@noaa.gov.

Sincerely,


for D. Robert Lohn
Regional Administrator

Cc: Ken Brunner, COE

Table 1. Species of fishes with designated EFH in Grays Harbor

Groundfish Species		Coastal Pelagic Species
Southern Shark <i>Galeorhinus galeus</i>	Sablefish <i>Anoplopoma fimbria</i>	anchovy <i>Engraulis mordax</i>
Spiny Dogfish <i>Squalus acanthias</i>	Bocaccio <i>Sebastes paucispinis</i>	jack mackerel <i>Trachurus symmetricus</i>
California Skate <i>Raja inornata</i>	Brown Rockfish <i>S. auriculatus</i>	Pacific sardine <i>Sardinops sagax</i>
Ratfish <i>Hydrolagus colliei</i>	Copper Rockfish <i>S. caurinus</i>	Pacific mackerel <i>Scomber japonicus</i>
Lingcod <i>Ophiodon elongatus</i>	Quillback Rockfish <i>S. maliger</i>	market squid <i>Loligo opalescens</i>
Cabezon <i>Scorpaenichthys marmoratus</i>	English Sole <i>Parophrys vetulus</i>	
Kelp Greenling <i>Hexagrammos decagrammus</i>	Pacific Sanddab <i>Citharichthys sordidus</i>	Pacific Salmon Species
Pacific Cod <i>Gadus macrocephalus</i>	Rex Sole <i>Glyptocephalus zachirus</i>	chinook salmon <i>Oncorhynchus tshawytscha</i>
Pacific Whiting (Hake) <i>Merluccius productus</i>	Starry Flounder <i>Platichthys stellatus</i>	coho salmon <i>O. kisutch</i>



United States Department of the Interior

FISH AND WILDLIFE SERVICE

Western Washington Fish and Wildlife Office
510 Desmond Dr. SE, Suite 102
Lacey, Washington 98503



In Reply Refer To:
1-3-06-I-0257
x-ref: 03-I-0771, 04-I-0403, and 05-I-0114

MAY 3 2006

Mark T. Ziminske, Chief Environmental Resource Section
Seattle District, Corps of Engineers
ATTN: Environmental Resource Section (Kinney)
P.O. Box 3755
Seattle, Washington 98124-3755

Dear Mr. Ziminske:

Subject: U.S. Army Corps of Engineers; Grays Harbor Navigation Channel Maintenance Dredging

Your March 16, 2006, letter requested our concurrence with your determination of "may affect, not likely to adversely affect" for bull trout (*Salvelinus confluentus*), western snowy plover (*Charadrius alexandrinus nivosus*), brown pelican (*Pelecanus occidentalis*), bald eagle (*Haliaeetus leucocephalus*), marbled murrelet (*Brachyramphus marmoratus*), and designated bull trout critical habitat for the annual maintenance dredging of approximately 2,500,000 cubic yards of material from the 23-mile-long Grays Harbor navigational channel in Grays Harbor County, Washington. Your letter along with the Programmatic Biological Evaluation was received in our office on March 20, 2006. This informal consultation has been conducted in accordance with section 7(a)(2) of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 *et seq.*).

The U.S. Army Corps of Engineers (Corps) has a long-term plan to conduct maintenance dredging of Grays Harbor. A Biological Opinion was written in 2000 with a Term and Condition that the Corps would conduct monitoring for bull trout over several years to ensure dredging would not occur during a time when bull trout were present. On March 16, 2006, we received the monitoring report titled *Native Char Utilization Lower Chehalis River and Grays Harbor Estuary*. We will review this report and provide comments via a separate letter. We acknowledge that the Corps would like a multi-year concurrence for maintenance dredging in Grays Harbor. We hope it is feasible to concur on a multi-year dredge operation after review of the report. This consultation will only cover 1 year.

There are four bull trout critical habitat Primary Constituent Elements (PCEs) identified in the marine waters of Grays Harbor where the proposed project would be constructed. The PCEs for the marine environment are: 1) water temperatures ranging from 2 °C-15 °C (PCE #1); 2)

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migratory corridors with minimal physical, biological, or water quality impediments (PCE #6); 3) and abundant food source (PCE #7); and 4) permanent water of sufficient quantity and quality (PCE #9).

Based on the information provided with your cover letter, we have concluded that effects to the threatened bull trout, western snowy plover, brown pelican, bald eagle, marbled murrelet and designated bull trout critical habitat that may be found within the proposed project area would be insignificant and discountable. Therefore, we concur with your "may affect, not likely to adversely affect" determination for those species and designated bull trout critical habitat. Specifically, our concurrence and conclusion is based on the following rationale.

Bull Trout

The proposed work would occur during the recommended work windows for Grays Harbor, when bull trout and prey species of bull trout are not likely to be present in the project area, or exposed to potential impacts from project implementation. Work timing windows in Grays Harbor vary upon location and have been based on recent bull trout studies conducted by the Corps in Grays Harbor (Corps 2006). Dredging will be conducted in the main navigational channel where bull trout have not been captured during the Corps study (Corps 2006). All dredge disposal will occur at an authorized disposal site and a portion will be stock-piled at an authorized site for use at Half Moon Bay. In addition, bull trout in the Corps 2006 study have been captured in the near-shore environment where dredging or disposal will not occur. Therefore, impacts from this project would be discountable in regard to bull trout.

Bull Trout Critical Habitat

The proposed project will not affect PCE #1. The proposed project is located in an area of Grays Harbor that receives adequately mixed saltwater; therefore, the proposed project is not expected to have a measurable effect on water temperature. The proposed project will not affect PCE #6. Bull trout may use the shoreline for migration and foraging; however, work is being conducted in the deepest portion of the channel. Therefore, migratory corridors will not be impacted as a result of the project. The proposed project will not affect PCE #7. The proposed project will not impact the bull trout's food base because the proposed project will not impact forage fish spawning or rearing habitat. Therefore, the proposed project will not prevent bull trout from feeding nor will it prevent forage fish from spawning, feeding, or rearing. The proposed project may affect PCE #9. The proposed project may impact water quality but will most likely impact water quality only over the short-term and will minimally impact bull trout critical habitat via increased turbidity associated with dredging the navigation channel. Furthermore, the increase in sedimentation will not prevent bull trout from using aquatic habitat in the project area. Based on limited effects to the marine waters PCEs, we have concluded the proposed project would result in insignificant effects to designated bull trout critical habitat.

Western Snowy Plover

No work will occur on or adjacent to western snowy plover nesting or foraging habitat. Therefore, impacts from this project will be discountable in regard to western snowy plover.

Brown Pelican

Brown pelicans are known to use the Grays Harbor area but are not expected to be disturbed from construction-related activities. Furthermore, brown pelicans do not breed in the Grays Harbor area so no nesting habitat would be impacted as a result of this project. The project would not reduce the amount of forage fish available to brown pelicans nor would the proposed project impact loafing habitat. Therefore, impacts from the proposed project are expected to be discountable with regard to brown pelicans.

Bald Eagle

The closest bald eagle nest is approximately 1 mile away so dredge-related sound is not anticipated to impact nesting bald eagles. In addition, no roosting, wintering, or foraging habitat would be impacted by the proposed project. Therefore, impacts are expected to be discountable with regard to bald eagles.

Marbled Murrelet

No suitable nesting habitat is present within 0.25 miles of the proposed project. The distance of the proposed project from suitable marbled murrelet nesting habitat should preclude any adverse effects to nesting marbled murrelets or their young. Marbled murrelets are known to forage in Grays Harbor and feeding behavior may be disrupted temporarily by the dredge and dredge plume, including the plume from disposal. However, this impact would be insignificant because the dredge plume will be localized and marbled murrelets in Grays Harbor are likely to have habituated to human activities. Therefore, the impacts are expected to be insignificant with regard to marbled murrelets.

This concludes informal consultation pursuant to the regulations implementing the Endangered Species Act (50 CFR 402.13). This project should be reanalyzed if new information reveals effects of the action that may affect listed species or critical habitat in a manner, or to an extent, not considered in this consultation. The project should also be reanalyzed if the action is subsequently modified in a manner that causes an effect to a listed species or critical habitat that was not considered in this consultation, and/or a new species is listed or critical habitat is designated that may be affected by this project.

Mark T. Ziminske

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If you have any questions about this letter or our joint responsibilities under the Endangered Species Act, please contact Brian Missildine at (360)753-9561 or Tom McDowell at (360)753-9426, of this office.

Sincerely,



for Ken S. Berg, Manager
Western Washington Fish and Wildlife Office

cc:
WDFW, Region 6
WDOE, Lacey (L. Ochoa)

Literature Cited

U. S. Army Corps of Engineers. 2006. Native char utilization lower Chehalis River and Grays Harbor Estuary Aberdeen, WA. 73pp.



STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

PO Box 47600 • Olympia, WA 98504-7600 • 360-407-6000
TTY 711 or 800-833-6388 (for the speech or hearing impaired)

Rec'd 8/10/06 #

REGISTERED MAIL

August 9, 2006

Mr. Hiram Arden
U.S. Army Corps of Engineers
P.O. Box 3735
Seattle WA 98124

RE: Water Quality Certification - Order # CENWS-OD-TS-NS-12 - First Amendment -
Maintenance dredging of the mainstem navigation channel extending from the
entrance channel near Westport to approximately river mile 3 on the Lower Chehalis
River in Grays Harbor, Grays Harbor County, Washington.

Dear Mr. Arden:

On April 6, 2001, the Washington State Department of Ecology (Ecology) issued a water quality certification to the Army Corps of Engineers (Corps) for the above-referenced project pursuant to the provisions of 33 U.S.C. 1341 (FWPCA § 401). On November 10, 2005 Ms. Aimee' Kenny of the Corps contacted Ecology with a request to amend Ecology's Water Quality Certification to extend the expiration date of the Order.

After reviewing the Corps request and other pertinent information, Ecology is amending this Order.

This amendment may be appealed by following the procedures described in this attached amendment. If you have any questions regarding the content of the amendment, please contact Helen Pressley at (360) 407-6076.

Sincerely,

Brenden McFarland, Section Supervisor
Environmental Review and Transportation Section Manager
Shorelands and Environmental Assistance Program

cc: Aimee' Kinney - Corps
Penny Keys - Ecology
Lori Ochoa - Ecology



DEPARTMENT OF ECOLOGY

In the Matter of Granting a	)	Order #
Water Quality Certification	)	CENWS-OD-TS-NS-12
To the Seattle District of the Army Corps of	)	First Amendment
Engineers	)	Maintenance dredging of Grays
In Accordance with 33 U.S.C. 1341	)	Harbor mainstem navigation channel
[FWPCA § 401], RCW 90.48.120, RCW	)	in Grays Harbor, Grays Harbor
90.48.260, and WAC 173-201A	)	County, Washington

Order dated April 6, 2001, is hereby amended as follows:

1. The preamble that reads ...Approximately 2.5 million cubic yards of clean silts and sands are to be dredged annually by clamshell or hopper dredge during the five-year period covered by this notice.

1. Is hereby amended to read ...Approximately 2.5 million cubic yards of clean silts and sands are to be dredged annually by clamshell or hopper dredge during the time period from April 6, 2001 to June 30, 2007.

Appeal Process:

You have the right to appeal this Order to the Pollution Control Hearings Board. Pursuant to chapter 43.21B RCW, your appeal must be filed with the Pollution Control Hearings Board, and served on the Department of Ecology within thirty (30) days of the date of your receipt of this document.

To appeal this Order, your notice of appeal must contain a copy of the Ecology Order you are appealing.

Your appeal must be filed with:

The Pollution Control Hearings Board
4224 - 6th Avenue SE, Rowe Six, Bldg. 2
P.O. Box 40903
Lacey, Washington 98504-0903

Your appeal must also be served on:

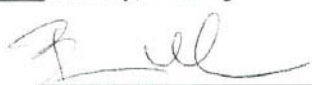
The Department of Ecology
Appeals Coordinator
P.O. Box 47608
Olympia, Washington 98504-7608.

In addition, please send a copy of your appeal to:
Federal Permit Appeals Coordinator
Department of Ecology
P.O. Box 47600
Olympia, Washington 98504-7600

For additional information: Environmental Hearings Office Website: <http://www.eho.wa.gov>

Your appeal alone will not stay the effectiveness of this Order. Stay requests must be submitted in accordance with RCW 43.21B.320. These procedures are consistent with Ch. 43.21B RCW.

Dated Aug 9 2006 at Lacey, Washington.



Brenden McFarland, Section Manager
Shorelands and Environmental Assistance Program
Department of Ecology
State of Washington



STATE OF WASHINGTON

DEPARTMENT OF ECOLOGY

P.O. Box 47600 • Olympia, Washington 98504-7600
(360) 407-6000 • TDD Only (Hearing Impaired) (360) 407-6006

April 6, 2001

Mr. Mark Howard
Seattle District Corps of Engineers
P.O. Box C-3735
Seattle, WA 98124-2255

RE: Water Quality Certification/Modification
Corps Public Notice No. CENWS-OD-TS-NS-12
Maintenance dredging of Grays Harbor/Chehalis River Navigation Channel

Dear Mr. Howard:

The above-referenced public notice for work in waters of the state has been reviewed in accordance with all pertinent rules and regulations. On behalf of the State of Washington, the department certifies that there is a reasonable assurance the work proposed in the public notice will be conducted in a manner that will not violate applicable State water quality standards. This certification is subject to the conditions contained in the enclosed Order and may be appealed by following the procedures described in the Order. If you have any questions concerning the content of the Order, please contact Rick Vining at (360) 407-6944.

Sincerely,

Paula Ehlers, Supervisor
Environmental Coordination Section
Shorelands and Environmental Assistance Program

cc: Ecology, Linda Rankin
EPA, Justine Barton
City of Westport
NMFS
Port of Grays Harbor
State Parks, Bill Jolly
USFWS, Fred Seavey
WDFW, Bob Burkle
WDNR

DEPARTMENT OF ECOLOGY

In the Matter of Granting a Water	)	Order # CENWS-OD-TS-NS-12
Quality Certification/Modification to:	)	Maintenance dredging of the Grays
the Seattle District Corps of Engineers	)	Harbor/Chehalis River navigation
In Accordance with 33 U.S.C. 1341	)	channel with disposal of the
[FWPCA § 401], RCW 90.48.260, and	)	dredged material at approved in-
WAC 173-201A	)	water and beneficial use sites.

ATTN: Mr. Mark Howard
Navigation Branch
Seattle District Corps of Engineers

On February 5, 2001 a request for water quality certification from the State of Washington was submitted for the above-referenced project(s) pursuant to the provisions of 33 U.S.C. 1341 (FWPCA § 401). The request for certification was made available for public review in Corps Public Notice CENWS-OD-TS-NS-12 dated February 7, 2001.

The proposed work described in the above referenced public notice involves the continuation of maintenance dredging of the mainstem navigation channel extending from the entrance channel near Westport to approximately river mile 3 on the Lower Chehalis River. Approximately 2.5 million cubic yards of clean silts and sands are to be dredged annually by clamshell or hopper dredge during the five-year period covered under this public notice. The dredged material is to be placed at three open-water disposal sites (Point Chehalis, South Jetty or 3.9 Mile) or used for beneficial purposes. Beneficial disposal sites include shallow subtidal locations off of South Beach and Half Moon Bay, and direct placement on the beach adjacent to the Point Chehalis revetment or placed at the stockpile site located landward of the revetment.

AUTHORITIES

In exercising authority under 33 U.S.C. 1341 and RCW 90.48.260, Ecology has investigated this application pursuant to the following:

1. Conformance with the state water quality standards as provided for in Chapter 173-201A WAC authorized by 33 U.S.C. 1313 and by Chapter 90.48 RCW, and with other appropriate requirements of state law, and
2. Conformance with the provision of using all known, available and reasonable methods to prevent and control pollution of state waters as required by RCW 90.48.010.

In view of the foregoing and in accordance with 33 U.S.C. 1341, 90.48.260 RCW and Chapter 173-201A WAC, certification is granted to the Seattle District Corps of Engineers subject to the following conditions:

1. Dredging.

a) Dredging operations shall be conducted in a manner that minimizes the disturbance or siltation of adjacent waters and prevents the accidental discharge of petroleum products, chemicals or other toxic or deleterious substance into waters of the State.

b) Reaches of the Chehalis River with historic and on-going water quality problems or that contain highly organic or fine sediments should be dredged during higher river flow periods.

c) Floating clamshell dredges are the preferred method of equipment for use in areas with high Dungeness crab abundance. Clamshells shall be operated so that each pass of the bucket is complete and there is to be no stockpiling in the water.

d) Hopper dredges shall be operated so that the intakes are at or below the surface of the sediments to be dredged. Intakes should only be raised a maximum of three feet above the bed for brief periods to purge or flush the intake systems. During the in-water disposal of hopper-dredged material, water should not be drawn through the dragheads to flush out the hopper bins unless the dragheads are lowered to 20 feet or more below the surface of the water. This is necessary to prevent significant uncontrolled overflow above the waterline of the vessel.

e) **Dredge Equipment Restrictions.** Timing restrictions are imposed on the type of dredging equipment used to maintain the navigation channel as a means to minimize impacts to Dungeness crabs. A clamshell dredge is known to be much less impacting to adult crabs than a hopper dredge. The latest timing restrictions are shown on Table 1. A recent change to timing is to allow hopper dredging in South Reach during the month of June. This change to timing is based on a compilation of survey data that shows fewer adult crabs in June than in May.

2. Disposal.

a) The sediments to be dredged from the navigation channel have been or will be sampled and analyzed according to guidelines and procedures prescribed in the Grays Harbor/Willapa Bay dredged material evaluation manual. All of sediments to be dredged in 2001/2002 were found suitable for unconfined in-water disposal. Any subsequent dredging of sediments from the navigation channel will be subject to the Recency and Frequency guidelines contained in the manual.

b) Disposal of dredged material at the in-water disposal sites shall be by bottom dump scow only; any other disposal method must be approved by the Dredged Material Management agencies.

c) Both floatable and non-floatable debris greater than 24 inches in size shall be removed from the dredged material prior to disposal at the in-water disposal sites and shall be suitably disposed of at an upland location.

d) Whenever practicable, the sandier fractions of dredged material from channel maintenance shall be placed or deposited for beneficial purposes. The suitability of dredged material for beneficial use options is dependent upon the on-going results of sediment sampling and analysis. The present public notice incorporates the following beneficial uses:

- (1) Placement of sandy dredged material at the shallow subtidal site located off of South Beach. This disposal site was included in Water Quality Certifications approved by the department in Order# CENPS-OP-NP-75R dated May 1, 1996 and then Order#CENPS-OP-NP-97 dated December 11, 1996. Conditions specified in those orders that are still applicable are considered conditions of this certification.
- (2) Placement of sandy dredged material at the shallow subtidal site located at the east/north east fringe of Half Moon Bay. This disposal site was included in Water Quality Certifications approved by the department in Order# CENPS-OP-NP-75R dated May 1, 1996 and then Order#CENPS-OP-NP-97 dated December 11, 1996. Conditions specified in those orders that are still applicable are considered conditions of this certification.
- (3) Placement of sandy dredged material at the stockpile site located landward of the Point Chehalis revetment, in the vicinity of the "Rear Range" notation shown on Sheet 3 of 3 in Public Notice CENWS-OD-TS-NS-12. This stockpile site is also shown in Figure 1 of the October 1998 Interagency Mitigation Agreement pertaining to the Point Chehalis Extension Project. This disposal site was included in the Water Quality Certification approved by the department in Order#TB-98-02 dated October 2, 1998. The stockpile (of approximate capacity of 20,000 cys) is to be maintained as a ready supply to be placed directly onto the water-facing slope of the revetment if it becomes exposed by winter storms. Conditions specified in Order#TB-98-02 still apply and are considered conditions of this certification.

In addition to the stockpile site, the placement of sandy dredged material directly onto the (Half Moon) beach abutting the revetment is called for in Order#CENPS-OP-NP-91 dated July 25, 1995, in Order#TB-98-02 (above), and is included as an integral component of the 1998 Mitigation Agreement (above). The timing and logistics of doing this beneficial work will require additional coordination with Ecology and WDFW if nearshore disposal is proposed.

Order No. CENWS-OD-TS-NS-12

April 6, 2001

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3. Washington Department of Fish and Wildlife.

The Department of Fish and Wildlife submitted input to the department in the form of an Advisory Hydraulic Project Approval (Enclosure 1). The provisions contained in the Advisory HPA are included as conditions of this Order, except as noted below:

Corrections to the Advisory HPA dated March 6, 2001:

1. Timing Limitations: The timing of maintenance dredging of the navigation channel is subject to the restrictions given in Table 1 of this order. Some work may proceed at the beginning of the calendar year. Yearly startup is not necessarily restricted to the July 16 date stipulated in the Advisory HPA. Completion date: this certification provides approval for a period of five years or through the dredging year of 2006. Work does not necessarily have to be completed by August 31, 2002, as stipulated in the Advisory HPA.

1.b. Section 5.d) of this certification stipulates special conditions pertaining to the possibility of encountering low dissolved oxygen levels in the upper reaches of the Chehalis River project during late summer/fall.

7. The timing restrictions pertaining to the use of a hopper dredge are indicated in Table 1. In some reaches, hoppers cannot be used after May 31st or June 30th.

13. This provision recommended by the Advisory HPA is not included in this certification, as it does not fall within the purview of Section 401 for the project under consideration. The erosion problem at Ocean Shores is being addressed under other authorities and processes. At some point, however, the placement of dredged material from this project may include a site or sites beneficial to the shoreline lying immediately north of the North Jetty.

4. Short-Term Modification to the Water Quality Standards

The dredging to be undertaken in Grays Harbor may have water quality effects that will exceed the state water quality standards specified in Chapter 173-201A WAC. Per Section 173-201A-110, the Department may grant a "Modification to the Standards" to allow for exceedances of the standards on a short-term basis.

a) The project reach is differentiated into two water quality classes as follows:

- * Class A - Grays Harbor west of longitude 123 degrees 59' W, and
- * Class B - Grays Harbor east of longitude 123 degrees 59' W to longitude 123 d 45' W (Chehalis River at RM 3.1)

Class A or B water quality standards apply, as appropriate, except as specifically modified by this order.

B) Mixing Zones. Temporary mixing zones are authorized for the dredging operations to allow for temporary exceedances of certain water quality standards. The mixing zones specified in Table 1 are considered reasonably sufficient to allow for the temporary impacts of dredging and/or disposal. The mixing zones for hopper dredges are specified so that a constant relationship is to be maintained with the dredge. The long dimension of the mixing zone is to extend directly behind (or downcurrent of) the dredge and the short dimension is to extend half way laterally from the extended centerline behind (or downcurrent of) the dredge.

Within the mixing zones, the following modifications to the standards are granted:

Turbidity: Class A and B water quality standards for turbidity are waived within the mixing zone.

Dissolved Oxygen: Class A and B water quality standards for dissolved oxygen are waived within the mixing zones, provided that total dissolved oxygen levels are not caused to drop below 5.0 mg/L.

All other applicable water quality standards shall remain in effect in the mixing zone and all water quality standards are expected to be met outside of the mixing zone.

c) Duration. As a result of recent changes to the water quality standards (Chapter 173-201A WAC), "modifications to the standards" may be issued for indefinite periods of time. Thus the modification allowance for maintenance dredging/disposal undertaken in Grays Harbor and the Lower Chehalis River is granted for the same duration as the water quality certification, that being for a period of five years.

The intent of a "modification to the standards" as a means to temporarily waive a water quality standard needs to be made clearer given the extended period of approval. The waiver of a water quality parameter (such as turbidity) within a specified mixing zone is intended only for brief periods of time (such as a few hours) and is not an authorization to exceed the turbidity standard for the entire duration of construction. In no case does the waiver authorize degradation of water quality that significantly interferes with or becomes injurious to characteristic water uses or causes long-term harm to the marine or freshwaters of Grays Harbor/Chehalis River. Also, the modification does not authorize any in-water work during closure periods specified by the Department of Fish and Wildlife.

This modification is also granted on the condition that all reasonable and appropriate "best management practices" are being undertaken to reduce the impacts that may cause exceedances of the water quality standards.

TABLE 1. Mixing Zones and Fishery Closure Periods

DREDGE TYPE	LOCATION	MIXING ZONE(S)	FISHERY CLOSURE PERIOD
Clamshell:	In and Upstream of Hoquiam Channel, including Cow Point Reach, South Aberdeen and Elliot Slough Turning Basin	300 feet radially from point of dredge operations.	February 15 – July 15 (for Juvenile salmonid outmigration) July 16 - November 1 (see Note 1)
	North Channel and Inner Crossover	300 feet radially from point of dredge operations.	None
Clamshell or Hopper:	Outer Crossover and South Reach	Clamshell - 300 feet radially from point of dredge operations. Hopper - 150 ft width by 600 ft length behind dredge.	No timing restriction related to fin fish. Hopper not be used after May 31 (Outer Crossover) and June 30 (South Reach) to minimize impacts to adult Dungeness crab.
Hopper:	Entrance and Bar Channels	150 ft width by 300 ft length (See Note 2)	No Hopper after May 31
In-Water Disposal:	Direct placement onto the upper beach of Half Moon Bay	300 feet radially from the point of return water discharge	February 15 – July 15

Notes:

1. Summer 2001 may result in exceptionally high water temperatures and low dissolved oxygen levels due to expected low flows in the Grays Harbor Basin. As a result, dredging "may" also have to be restricted during the return of adult salmon. The Corps/Corps contractor shall notify Ecology if water quality monitoring finds DO at or below 5.0 mg/l within the authorized mixing zones.
2. Overflow from the hopper shall not occur for more than twenty (20) minutes.

5. Water Quality Monitoring.

Water quality monitoring is the responsibility of the Seattle District and/or contract dredger.

Results of the monitoring shall be recorded and submitted to Ecology, Attn: Rick Vining monthly, or more frequently if requested, or by fax at (360) 407-6944. The monitoring program shall conform to the following.

The inner reaches of the channel, east of 123° 57' 30", are more sensitive to water quality impacts during the low flow periods of the Chehalis River. As a result, monitoring of the potential water quality effects of dredging is required when the Chehalis River flow, as reported by the U.S. Geological Survey, drops below 1,000 cubic feet per second.

- a) Monitoring consists of taking representative water column samples twice daily for a minimum of two days per week during dredging at or near high and low slack tides. Sampling may be required under higher flow conditions if determined necessary by WDOE or WDFW due to dredged material characteristics, receiving water quality conditions, limited dilution in small streams receiving effluent, or other factors. River flows shall be recorded daily during dredging, when river flow is below 1,500 cfs.
- b) Samples shall be taken inside the dilution zone and at the dilution zone boundary and shall target any visible turbidity plume. A minimum of three samples shall be collected, one each at 0.5 meters below the surface, 0.5 meters from the bottom and at mid-depth. One background sample will be taken in the vicinity of the dredge.
- c) Samples shall be analyzed for the following parameters: turbidity, dissolved oxygen, temperature, and salinity. Dissolved oxygen measurements shall be by the Winkler method at DO levels below 6.0 mg/L. Probe measurements may be made in conjunction with Winkler or at DO levels above 6.0 mg/L.
- d) The Corps and/or contractor shall notify Rick Vining at (206) 407-6944 if dissolved oxygen levels below 5.0 mg/L are measured inside or outside the dilution zone on two consecutive samples. After being notified the WDOE will determine whether dredging is to continue. Measurements below 4.0 mg/L DO shall be verified immediately and dredging ceased immediately if the repeat measurement indicates DO levels below 4.0 mg/L at any location. When reporting low DO levels to WDOE, the most recent Chehalis River flows and water temperature should also be reported.
- e) As often as possible, but not less than twice daily, throughout the dredging operations visual observations in the vicinity of the dredge and the return flow discharge shall be made for distressed or dead fish or any other unusual conditions. Times and conditions should be noted in the ships log or other appropriate log.

6. Mitigation

Mitigation requirements for O&M dredging vary from year to year but at present have not been fully met. Thus, crab mitigation shall continue to be implemented as directed under the "Revised Crab Mitigation Strategy Agreement" dated September 1998.

7. Emergency and/or Contingency Measures. If dredging or disposal operations are found not to be in compliance with the provisions of this water quality modification, or result in conditions causing distressed or dying fish, the operator shall immediately take the following actions:

- a) Cease operations at the location of the violation.
- b) Assess the cause of the water quality problem and take appropriate measures to correct the problem and/or prevent further environmental damage.
- c) In the event of finding distressed or dying fish, the operator shall collect fish specimens and water samples in the affected area and, within the first hour of such conditions, make every effort to have the water samples analyzed for dissolved oxygen and total sulfides. The department may require such sampling and analyses before allowing the work to resume.
- d) Notify the Department of Ecology and the Department of Fish and Wildlife of the nature of the problem, any actions taken to correct the problem, and any proposed changes in operations to prevent further problems.

8. Spill Prevention and Control.

- a) Any discharge of oil, fuel, or chemicals into state waters, or onto land with a potential for entry into state waters, is prohibited.
- b) Fuel hoses, oil drums, oil or fuel transfer valves and fittings, etc., shall be checked regularly for drips or leaks, and shall be maintained and stored properly to prevent spills into state waters. Proper security shall be maintained to prevent vandalism.
- c) In the event of a discharge of oil, fuel, or chemicals into state waters, or onto land with a potential for entry into state waters, containment and cleanup efforts shall begin immediately and be completed as soon as possible, taking precedence over normal work. Cleanup shall include proper disposal of any spilled material and used cleanup materials.
- d) Spills into state waters, spills onto land with a potential for entry into state waters, or other significant water quality impacts, shall be reported immediately to the department's Southwest Regional Office at (360) 407-7000 (a 24-hour phone number).

Order No. CENWS-OD-TS-NS-12

April 6, 2001

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9. Other Requirements.

- a) Copies of this Order shall be kept on the job site and readily available for reference by the Corps of Engineers, Ecology personnel, the contractor, and other appropriate state and local government inspectors.
- b) The Department of Ecology, Environmental Coordination Section retains jurisdiction to make modifications hereto through supplemental order, if it appears necessary to protect the public interest during the modification period.
- c) The Corps or designated contractor shall notify the department at least 14 days prior to the scheduled start of dredging. The contact person is Rick Vining at (360) 407-6944.
- d) This certification does not exempt and is provisional upon compliance with other statutes and codes administered by federal, state, and local agencies.
- e) The permittee (Corps) shall be considered out of compliance with this certification if:
 - 1. the project is constructed and/or operated in a manner not consistent with the project description contained in the Public Notice.
 - 2. two years elapse between the date of the issuance of this certification and the start of construction and/or discharge for which the federal permit is being sought; however, the expiration date may be extended by the department at the request of the permittee.

10. Penalties. Failure to comply with this Order may result in the issuance of civil penalties or other actions, whether administrative or judicial, to enforce the terms of this Order.

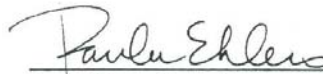
Order No. CENWS-OD-TS-NS-12

April 6, 2001

10

- 11. Appeal Process.** Any person aggrieved by this Order may obtain review thereof by appeal, within thirty (30) days of receipt of this Order, to the Washington Pollution Control Hearings Board, PO Box 40903, Olympia WA 98504-0903. Concurrently, a copy of the appeal must be sent to the Department of Ecology, Enforcement Section, PO Box 47600, Olympia WA 98504-7600. These procedures are consistent with the provisions of Chapter 43.21B RCW and the rules and regulations adopted thereunder.

Dated 4.9.01 at Lacey, Washington



Paula Ehlers, Supervisor
Environmental Coordination Section
Shorelands and Environmental Assistance Program
Department of Ecology

Appendix F
Public Notice and 404(b)(1) Evaluation



US Army Corps
of Engineers®

Seattle District

Public Notice

Navigation Section
PO Box 3755
Seattle, WA 98124-3755
ATTN: Hiram Arden (OD-TS-NS)

Notice Date: July 28, 2006
Expiration Date: August 26, 2006
Reference: CENWS-OD-TS-NS-25

US ARMY CORPS OF ENGINEERS, SEATTLE DISTRICT FISCAL YEARS 2007
THROUGH 2011 MAINTENANCE DREDGING AND DISPOSAL, GRAYS HARBOR AND
CHEHALIS RIVER FEDERAL NAVIGATION PROJECT, WASHINGTON

Interested parties are hereby notified that the U.S. Army Corps of Engineers, Seattle District (Corps) plans to continue routine dredging and disposal activities associated with maintenance of the Grays Harbor and Chehalis River Federal navigation channel. The maintenance program for fiscal years 2007 through 2011 is described below, and the location of the proposed dredging and disposal sites are shown on the attached plans. The purpose of this Public Notice is to solicit comments from interested persons, groups and agencies.

PURPOSE AND PROJECT OBJECTIVE

The Port of Grays Harbor utilizes the Federally authorized navigation channel to provide sea-going vessels with commercial access to the cities of Aberdeen, Hoquiam, and Cosmopolis. Without annual maintenance dredging, shoaling would lead to a shallower channel that would reduce the ability of large ships to enter and leave Grays Harbor safely. The purpose of channel maintenance dredging is to maintain the efficiency and safety of deep-draft water transportation in Grays Harbor.

AUTHORITY

The Grays Harbor and Chehalis River Project and maintenance dredging by the Department of the Army were authorized by the River and Harbor Act of 1945, the Act of September 3, 1954 (House Document 412, 83rd Congress, 2nd Session), and the Water Resources Development Act of November 17, 1986 (Public Law 662).

This public notice is being issued in accordance with rules and regulations published as 33 CFR 335 "Operation and Maintenance of Army Corps of Engineers Civil Works Project Involving the Discharge of Dredge or Fill Material into Waters of the United States and Ocean Waters"; 33 CFR 336 "Factors to be Considered in Evaluation of Army Corps of Engineers Dredging Projects Involving the Discharge of Dredged Material into Waters of the United States and Ocean Waters"; 33 CFR 337 "Practice and Procedure"; and 33 CFR 338 "Other Corps Activities Involving the Discharge of Dredged or Fill Material into Waters of the United States." The locations of the proposed dredging and disposal sites are shown on the attached drawings.

The proposed maintenance dredging and disposal activities will be reviewed in accordance with Section 313 of the Clean Water Act of 1977 (33 U.S.C. 1323, 86 Stat. 816); Section 404 of the same act (33 U.S.C. 1344); the Coastal Zone Management Act of 1972 (16 U.S.C. 14560 (1) and (2), 86 Stat. 1280), the National Environmental Policy Act of 1969 (42 U.S.C. 4321-4347); and the Endangered Species Act of 1973 (16 U.S.C. 668a-668cc-6, 87 Stat. 884).

FEDERAL MAINTENANCE DREDGING

The proposed work continues annual maintenance dredging (Public Notice CENWS-OD-TS-NS-12 dated February 7, 2001) by clamshell and hopper dredges of an estimated 2,500,000 cubic yards (cy) of sediment annually from the deep draft Grays Harbor and Chehalis River navigation project. Placement of the resulting material will be in existing approved open water disposal sites, nearshore nourishment sites, and the direct beach nourishment site. Table 1 that follows contains the quantity of material expected to be removed by reach, dredge type, depth, disposal area, and planned work periods.

NOTE: Ancillary, Non-Federal clamshell maintenance dredging is performed annually by the Port of Grays Harbor at their Port Terminals under separate individual Corps permits. Mr. Mike Johnson, Port Contract Administrator (360) 533-9518 is a suggested point of contact regarding Port maintenance activities.

MAINTENANCE MATERIAL BENEFICIAL USE/DISPOSAL

The proposed work includes continued nourishment of the nearshore areas in Half Moon Bay and at South Beach using dredged sand from the outer harbor. Beneficial use is the preferred method of disposal to ensure the Point Chehalis revetment extension remains buried, and to promote a stable sandy beach profile in Half Moon Bay. Direct beach nourishment on the eastern shore of Half Moon Bay will also take place. This sand placement will be confined to the area above +9 feet above mean lower low water, and will be conducted when the capacity of the direct beach nourishment site is depleted to such an extent that it is cost-efficient to contract for dredging and transportation via a specialty dredge with pump-off capabilities, vice the Government hopper dredge that is customarily used. The Half Moon Bay nearshore site can only be used if the depth is sufficient to allow a bottom dump barge or hopper dredge to enter the Bay for safe positioning and placement of material. The balance of the maintenance dredge material will be disposed at the Point Chehalis, South Jetty, or Southwest (3.9 Mile) Open Water Disposal Sites.

The designated dispersive dredge material disposal sites at Grays Harbor are as follows:

1. Point Chehalis. The Point Chehalis site is an estuarine site located inside the mouth of Grays Harbor adjacent to the Entrance Reach of the Federal navigation channel off Point Chehalis. The 2,000-foot by 5,000-foot rectangular shaped site has water depths exceeding 50 feet.
2. South Jetty. The South Jetty Site is an estuarine site located inside the mouth of Grays Harbor adjacent to the Entrance Reach of the Federal navigation channel along side the exposed portion of the South Jetty. The 800-foot by 3,000-foot rectangular shaped site has varied water depths to exceeding 50 feet.
3. Southwest (3.9 Mile). The Southwest (3.9 Mile) site is an ocean site located within the southwest navigation lane leading to the entrance to Grays Harbor and is 3.9 nautical miles southwest of the harbor entrance. The site is shaped like a parallelogram and has an area of

1.66 statute square miles (1.25 square nautical miles). The short sides of the site are approximately 6,000 feet long and the long sides, 8,000 feet long. The shoreward edge of the site lies along the 90 foot depth contour and approximately one third of the site is deeper than the 120 foot contour. This site will be used only when the South Beach beneficial use site is not available.

Table 1. FY07-11 Maintenance Dredging Program by Reach

REACH	ESTIMATED VOLUME (CY)	DREDGE TYPE	CHANNEL DIMENSIONS ¹	DISPOSAL AREA(S)	WORK SCHEDULE
S. Aberdeen	55,000 annually	clamshell	-32' MLLW 200-300' wide	South Jetty or Point Chehalis ²	16 July to 14 Feb
<i>Elliott Slough Turning Basin</i>	60,000 biennially	clamshell	-32' MLLW 350-550' wide	South Jetty or Point Chehalis ²	16 July to 14 Feb
Cow Point	750,000 annually	clamshell	-36' MLLW 350-550' wide	South Jetty or Point Chehalis ²	16 July to 14 Feb
<i>Cow Point Turning Basin</i>	200,000 annually	clamshell	-36' MLLW 350-950' wide	South Jetty or Point Chehalis ²	16 July to 14 Feb
Hoquiam	150,000 annually	clamshell	-36' MLLW 350' wide	South Jetty or Point Chehalis ²	16 July to 14 Feb
North Channel	150,000 annually	clamshell	-36' MLLW 350' wide	Point Chehalis	August to 14 Feb
Inner Crossover	200,000 annually	clamshell	-36' MLLW 350-450' wide	Point Chehalis	August to 14 Feb
Outer Crossover	200,000 annually	hopper ³	-36' MLLW 350' wide	Point Chehalis	April and May
South Reach	400,000 annually	hopper ³	-36' MLLW 350-450' wide	Point Chehalis or Half Moon Bay	April to June
Entrance/ Point Chehalis	400,000 annually	hopper	-40' to -46' MLLW 600-900' wide	South Jetty or Half Moon Bay or Point Chehalis	April and May
Bar Channel	250,000 as needed	hopper	-46' MLLW 900' wide	South Beach or South Jetty or 3.9 mile	April and May

Notes:

¹ Depths shown are authorized depths and do not include 2' advanced maintenance or 2' overdepth tolerance. Exceptions: South Aberdeen Reach has 0' advance maintenance and 1' overdepth tolerance. Elliott Slough Turning Basin has 3' advance maintenance for half of the channel (inside bend). Widths shown are those of the channel bottom, and do not include extra width at channel bends. The channel station 795+00 delineates the line between the outer and inner harbor channel reaches (as shown on Figure 2.)

² Adverse weather/wave relief site.

³ Clamshell required after May 31 (Outer Crossover) and June 30 (South Reach)

DREDGED DISPOSAL ANALYSIS

The proposed dredged material has been tested according to the “Dredged Material Evaluation Procedures and Disposal Site Management Manual, Grays Harbor and Willapa Bay, Washington,” dated June 1995. These evaluation procedures were compiled by the regulatory agencies which have jurisdiction over dredged material disposal in open-water sites associated with Grays Harbor and Willapa Bay. Dredged material evaluations include both chemical and biological testing. Based on continuing biennial sediment sampling and testing in the Grays Harbor Navigation Channel, all dredged material from annual channel maintenance dredging has been approved for unconfined, open water disposal. No testing is required for the outer harbor reaches (South Reach and to the west), based on exclusionary criteria specified under either Section 404 of the Clean Water Act or Section 103 of the Marine Protection, Resources and Sanctuaries Act; however, periodic grain size analysis is performed to assure compliance with exclusionary criteria. All sediment testing data are available at the Corps Dredge Material Management Office.

MITIGATION

During the formulation of the existing maintenance dredging program, much care was taken to reduce environmental impacts. Several impact avoidance, minimization, and compensation measures have been incorporated into the maintenance program, including:

1. To avoid impacts to bull trout and out-migrating juvenile salmon, the Corps does not dredge the South Aberdeen Reach, Cow Point Reach, Hoquiam Reach, and turning basins between February 15 and July 15.
2. To reduce entrainment of fish, shrimp, and crabs, the inner harbor reaches are dredged using a clamshell dredge.
3. To reduce entrainment of Dungeness crabs, no hopper dredging occurs in outer harbor reaches during periods of peak crab abundance.
4. Water quality monitoring occurs during inner harbor dredging when flow of the Chehalis River drops below 1,000 cubic feet per second at Hoquiam, as reported by the U.S. Geological Survey. The Corps notifies Ecology if dissolved oxygen (DO) levels fall below 5 mg/L. Dredging is ceased immediately if DO measurements fall below 4 mg/L.
5. To avoid significant impacts to Dungeness crab and marine fishes, trawl surveys occur in the Half Moon Bay nearshore disposal site prior to any disposal activities. This site is not used if high densities of crabs or commercially important fish species are found.
6. Disposal at the Half Moon Bay nearshore disposal site and the South Beach disposal site is coordinated with commercial crab fisherman to reduce the potential for damage to crab pots.
7. Disposal at the Half Moon Bay direct beach nourishment site is restricted to above +9' MLLW (the mean higher high water line at this location), pursuant to the *Point Chehalis Revetment Extension Mitigation Agreement*.
8. To compensate for the loss of Dungeness crabs to the commercial fishery, the Corps places oyster shell on intertidal mudflats in order to improve survival rates for young-of-the-year crabs.

ENDANGERED SPECIES

The Endangered Species Act of 1973, as amended, requires assessment of potential impacts to listed and proposed species. The U.S. Fish and Wildlife Service and National Marine Fisheries

Service have identified several Federally listed species which may occur in the project vicinity, including: Coastal/Puget Sound bull trout and their critical habitat (*Salvelinus confluentus*), bald eagle (*Haliaeetus leucocephalus*), marbled murrelet (*Brachyramphus marmoratus marmoratus*), Western snowy plover (*Charadrius alexandrius nivosus*) and their critical habitat, brown pelican (*Pelecanus occidentalis californicus*), Southern resident killer whale (*Orcinus orca*), Southern Green Sturgeon (*Acipenser medirostris*), Steller sea lion (*Eumetopias jubatus*), humpback whale (*Megaptera novaeangliae*), blue whale (*Balaenoptera musculus*), fin whale (*Balaenoptera physalus*), Sei whale (*Balaenoptera borealis*), sperm whale (*Physeter macrocephalus*), leatherback sea turtle (*Dermochelys coriacea*), loggerhead sea turtle (*Caretta caretta*), green sea turtle (*Chelonia mydas*), and olive ridley sea turtle (*Lepidochelys olivacea*).

The Corps is currently evaluating potential impacts of the proposed action to the listed species. A preliminary determination has been made that the proposed work may affect several species. Informal consultation under Section 7 of the Act is therefore required.

CULTURAL AND HISTORIC RESOURCES

The District Engineer has reviewed the latest published version of the National Register of Historic Places, lists of properties determined eligible, and other sources of information. The following is current knowledge of the presence or absence of historic properties and the effects of the undertaking upon these properties:

Since the proposed dredging and disposal activities are confined to the removal of recently deposited sediments within the previously dredged channel width and depth boundaries or placement of material within existing disposal sites, little likelihood exists for the proposed project to impinge on an undisturbed historic property.

The District Engineer invites responses to this Public Notice from Federal, State and local agencies, historical and archeological societies, Indian Tribes and other parties likely to have knowledge of or concerns with historic properties in the area.

PUBLIC HEARING

Any person may request, in writing, within the comment period specified in this notice that a public hearing be held to consider this application. Requests for public hearings shall state, with particularity, the reasons for holding a public hearing.

EVALUATION

The decision to allow continued dredge material disposal at the existing sites will be based on an evaluation of the probable impact of the proposed activity on the public interest. That decision will reflect the national concern for both protection and utilization of important resources. The benefit which may reasonably be expected to accrue from the proposal must be balanced against its reasonably foreseeable detriments. All factors which may be relevant to the proposal will be considered; among those are conservation, economics, esthetics, general environmental concerns, historic values, fish and wildlife values, flood damage prevention, land use, navigation, recreation, water supply, water quality, energy needs safety, food production and, in general, the needs, and welfare of the people.

The Corps is soliciting comments from the public; Native American Nations or tribal governments; Federal, State, and local agencies and officials; and other interested parties in order to consider and evaluate the effects of this activity. Any comments received will be considered by the Corps to determine whether to allow continued maintenance dredging and disposal. To make this decision, comments are used to assess impacts on endangered species, historic properties, water quality, general environmental effects, and other public interest factors listed above.

The proposed discharge will be evaluated for compliance with guidelines promulgated by the Environmental Protection Agency under authority of Section 404(b)(1) of the Clean Water Act.

ADDITIONAL EVALUATION

The State of Washington is reviewing this work for compliance with the applicable State and Federal water quality standards pursuant to Section 401 of the Clean Water Act. The Corps has made a determination that the proposed work is consistent to the maximum practicable extent with the State of Washington Coastal Zone Management Program.

A draft environmental assessment (EA), tiered from previous Grays Harbor Environmental Impact Statements and EAs, has been prepared in accordance with the requirements of the National Environmental Policy Act. The draft EA's public comment period is concurrent with the comment period for this notice. The draft EA will be available at the Timberland Regional Library branches in Aberdeen, Hoquiam, and Westport as well as the Ocean Shores Library. The draft EA is also available on the Seattle District's web site, <http://www.nws.usace.army.mil> (follow links to Environmental Resources Section, Environmental Documents page).

COMMENT AND REVIEW PERIOD

Conventional mail or e-mail comments on this public notice will be accepted and made part of the record and will be considered in determining whether it would be in the public interest to allow continued dredge material disposal. All email comments should be sent to Hiram.T.Arden@usace.army.mil. Conventional mail comments should be sent to U.S. Army Corps of Engineers, Navigation Section, P.O. Box 3755, Seattle, WA 98124-3755. All comments must reach this office no later than the expiration date of this public notice to ensure consideration. Telephone inquiries should be directed to Hiram Arden, Project Manager, at (206) 764-3401.

Hiram Arden
Project Manager
Navigation Section



STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

P.O. Box 47600 • Olympia, Washington 98504-7600
(360) 407-6000 • TDD Only (Hearing Impaired) (360) 407-6006

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

Notice of Application for
Water Quality Certification
and for
Certification of Consistency with the
Washington Coastal Zone Management Program

Date: July 28, 2006

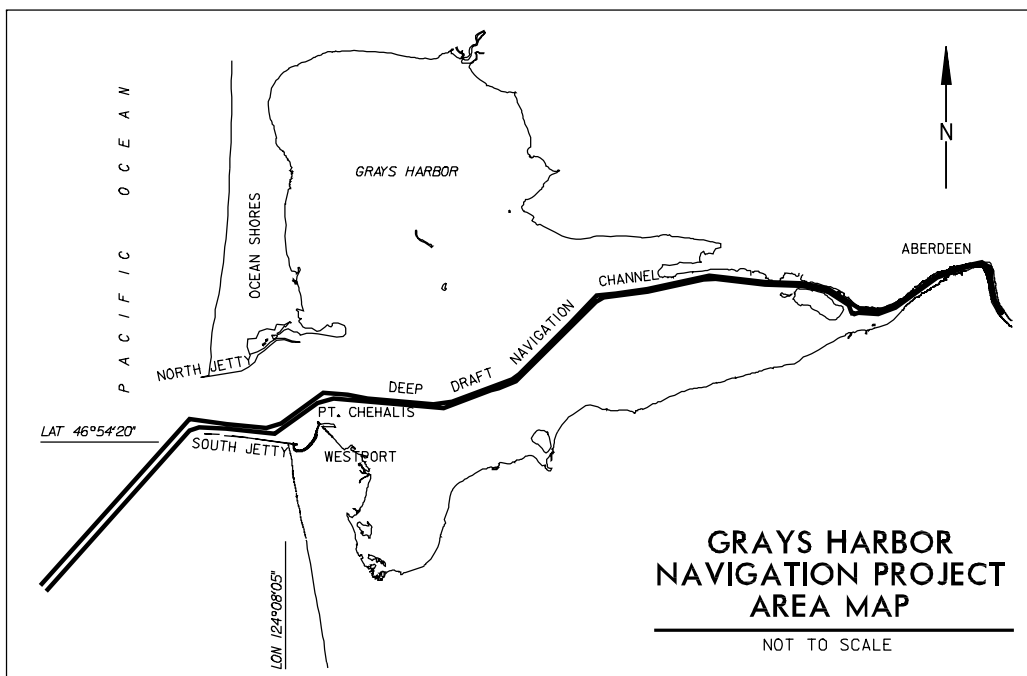
Notice is hereby given that a request has been filed with the Department of Ecology, pursuant to the requirements of Section 401 of the federal Clean Water Act of 1977 (PL 95-217), to certify that the project described in the U.S. Army Corps of Engineers Public Notice No. CENWS-OD-TS-NS-25 will comply with the Sections 301, 302, 303, 306, and 307 of the Act, and with applicable provisions of State and Federal water pollution control laws.

Notice is hereby given that a request has been filed with the Department of Ecology, pursuant to the requirements of Section 307© of the Federal Coastal Zone Management Act of 1972 (16 U.S.C. 1451), to certify that the above referenced project will comply with the Washington State Coastal Zone Management Program and that the project will be conducted in a manner consistent with that program.

Any person desiring to present views on the project pertaining to the project on either or both (1) compliance with water pollution control laws or (2) the project's compliance or consistency with the Washington State Coastal Zone Management Program may do so by providing written comments within 30 days of the above publication date to:

Federal Permit Coordinator
Department of Ecology
SEA Program
Post Office Box 47600
Olympia, Washington 98504-7600

GRAYS
HARBOR
PROJECT



HORIZONTAL DATUM: NAD 83

U.S. ARMY ENGINEER DISTRICT, SEATTLE
CORPS OF ENGINEERS
SEATTLE, WASHINGTON

WESTPORT, WA & VICINITY
GRAYS HARBOR DREDGING/DISPOSAL

VICINITY AND AREA MAP

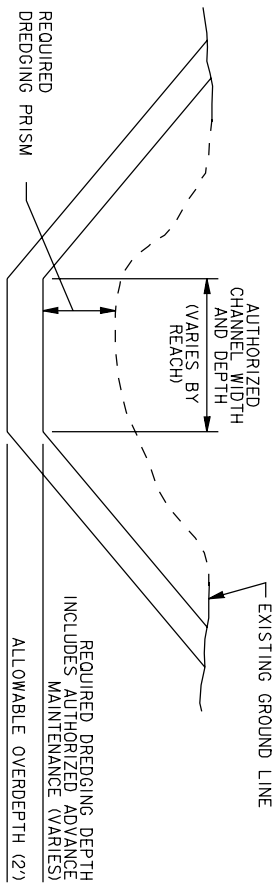
DATE:

PUBLIC NOTICE:

7 JULY 2006

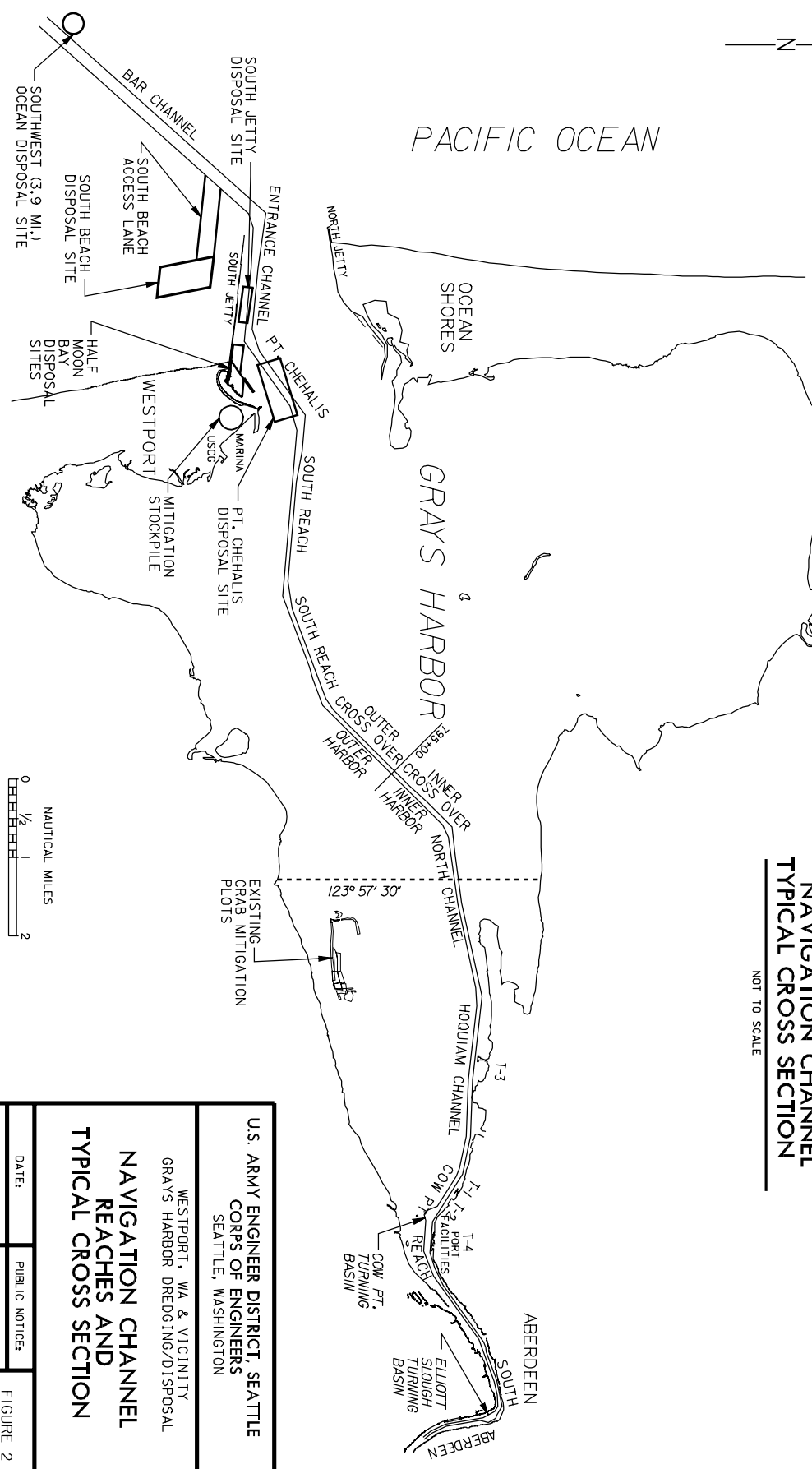
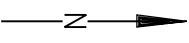
CENWS-OD-TS-NS-25

FIGURE I



NAVIGATION CHANNEL TYPICAL CROSS SECTION

NOT TO SCALE

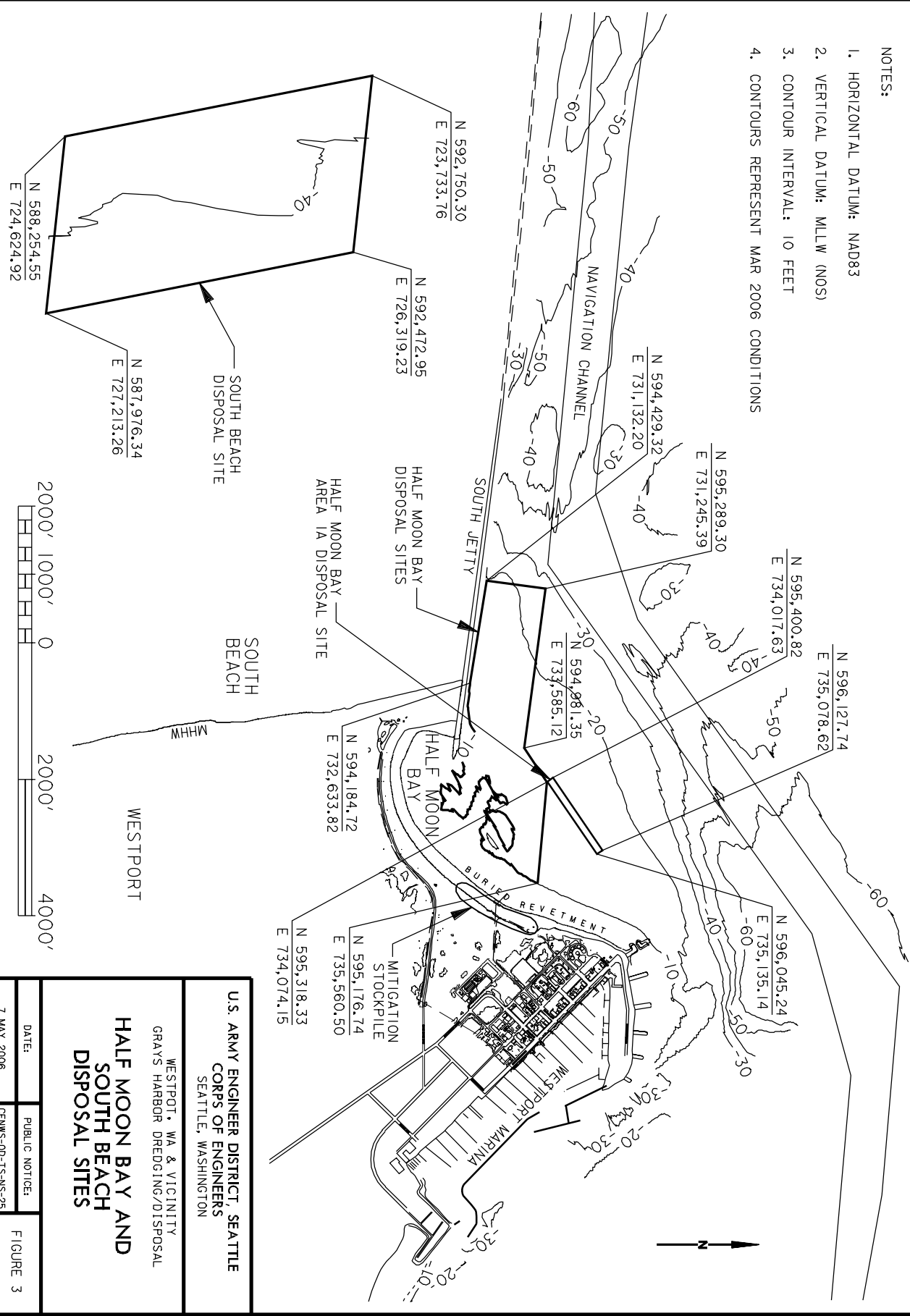


U.S. ARMY ENGINEER DISTRICT, SEATTLE
CORPS OF ENGINEERS
SEATTLE, WASHINGTON

WESTPORT, WA & VICINITY
GRAY'S HARBOR DREDGING/DISPOSAL
NAVIGATION CHANNEL
REACHES AND
TYPICAL CROSS SECTION

DATE:	PUBLIC NOTICE:	FIGURE 2
7 MAY 2006	CEWWS-00-TS-NS-25	

- NOTES:
1. HORIZONTAL DATUM: NAD83
 2. VERTICAL DATUM: MLLW (NOS)
 3. CONTOUR INTERVAL: 10 FEET
 4. CONTOURS REPRESENT MAR 2006 CONDITIONS



U.S. ARMY ENGINEER DISTRICT, SEATTLE
 CORPS OF ENGINEERS
 SEATTLE, WASHINGTON

WESTPORT, WA & VICINITY
 GRAYS HARBOR DREDGING/DISPOSAL

**HALF MOON BAY AND
 SOUTH BEACH
 DISPOSAL SITES**

DATE:	PUBLIC NOTICE:	FIGURE 3
7 MAY 2006	CEHW-00-TS-NS-25	

**Fiscal Years 2007-2011 Maintenance Dredging and Disposal
Grays Harbor and Chehalis River Navigation Project
Grays Harbor County, Washington**

**Substantive Compliance for
Clean Water Act Section 404 and Rivers and Harbors Act**

- 1. Introduction.** The purpose of this document is to record the Corps' evaluation and findings regarding this project pursuant to Section 404 of the Clean Water Act (CWA) and the Rivers and Harbors Act (RHA).

The following actions are covered by this document:

- a. annual maintenance dredging of the Grays Harbor and Chehalis River Navigation Channel; and
- b. disposal of the dredged material at three unconfined open-water dredged material disposal sites and two beneficial use disposal sites.

The information contained in this document reflects the findings of the project record. Specific sources of information included the following:

- a. Grays Harbor and Chehalis River Navigation Project, Operation and Maintenance Environmental Impact Statement, dated June 1975
- b. Long Range Maintenance Dredging Program for the Grays Harbor and Chehalis River Navigation Project, Operation and Maintenance Environmental Impact Statement Supplement No. 2, dated October 1980
- c. Grays Harbor, Chehalis and Hoquiam Rivers, Washington Channel Improvements for Navigation Interim Feasibility Report and Final Environmental Impact Statement, dated September 1982
- d. Grays Harbor, Washington, Navigation Improvement Project Final EIS Supplement, dated February 1989
- e. Grays Harbor, Washington, Navigation Improvement Project Operations and Maintenance Final Environmental Assessment, 1989 Sediment Collection and Testing Program, dated February 1990
- f. Dredged Material Evaluation Procedures and Disposal Site Manual, dated June 1995
- g. Grays Harbor and Chehalis River Navigation Project, Fiscal Years 2007-2011 Maintenance Dredging and Disposal Environmental Assessment, dated July 2006
- h. Grays Harbor Navigation Project, Fiscal Years 2007-2011 Maintenance Dredging and Disposal Programmatic Biological Evaluation, dated August 2006
- i. 404(b)(1) Evaluation (see below)
- j. Public Interest Review (see below)

This document addresses the substantive compliance issues of the Clean Water Act 404(b)(1) Guidelines [40 CFR §230.12(a)] and the Regulatory Programs of the Corps of Engineers [33 CFR §320.4(a)].

- 2. Project Background.** Public Notice CENWS-OD-TS-NS-25 (July 28, 2006) and a NEPA Environmental Assessment describe annual Grays Harbor federal maintenance dredging, and disposal of dredged material at the Point Chehalis, South Jetty, South Beach, Half Moon Bay, and 3.9 mile (ocean) disposal sites. The Grays Harbor and Chehalis River navigation channel was originally authorized in 1896, and regular maintenance dredging began in 1935. In 1990, construction on the navigation improvement project was initiated. Construction of the wider and deeper channel is now complete. The current action is maintenance of authorized depths for the 23.5 mile long channel.
- 3. Project Need.** The Grays Harbor navigation channel is dredged on an annual basis to maintain a shipping channel from the Pacific Ocean to the head of navigation at Cosmopolis, Washington. Without annual maintenance dredging, shoaling would reduce the ability of ships to enter and leave safely under full load or during low tide conditions.
- 4. Project Purpose.** The purpose of dredging and disposal operations at Grays Harbor is to maintain the deep draft Grays Harbor Navigation Project.
- 5. Availability Of Less Environmentally Damaging Practicable Alternatives to Meet the Project Purpose.** The alternatives evaluated for this project were as follows:

 - a. Alternative 1 (No Action).** Under this alternative, the Corps would not dredge the Grays Harbor Navigation Channel. Shoaling would impede navigation from the Pacific Ocean to the head of the channel at Cosmopolis, Washington. The ability of ships to enter and leave the Port of Grays Harbor safely under full load or during low tide conditions would be restricted. A reduction in shipping of forest products to domestic and international markets would result in serious impacts to the economy of Grays Harbor County. Local companies would have to either ship limited quantities, ship only during higher tides, or ship material from a different port.
 - b. Alternative 2 (Reduced Dredging).** Much care has been taken during the formulation of the proposed project to reduce dredging amounts to the very least possible. The quantity of material proposed to be dredged from the Grays Harbor channel during the next five years is the minimum amount necessary to accomplish project purposes.
 - c. Alternative 3 (Alternate Disposal Sites).** Upland disposal sites were used in the past, but all existing upland sites in reasonable proximity to Grays Harbor have been filled to capacity and no new sites have been designated. Substantial cost and logistical constraints preclude use of upland sites not in close proximity to the harbor. Wetland sites were also used in the past; extensive intertidal acreage in the inner Harbor was filled using dredged material, creating much of downtown Aberdeen and Hoquiam. Large expanses of undeveloped lands adjacent to Grays Harbor are typically a mixture of beach-dune complex and wetlands which have important value as fish and wildlife habitat. Disposal in upland or wetland sites would also permanently remove clean sands from the sediment-starved Washington coast (i.e., making these sands unavailable for longshore transport to feed beaches to the north).

Findings. The Corps rejected Alternatives 1 and 2 because they were not practicable; these alternatives would not meet the project objectives presented in the Navigation Improvement Project EIS. Alternative 3 was rejected because the use of these adjacent upland and wetland areas is not considered less environmentally damaging than open water disposal and nearshore/direct beach nourishment.

6. Significant Degradation, Either Individually or Cumulatively, To the Aquatic Environment

a. Impacts on Ecosystem Function. Habitat in and adjacent to the Grays Harbor navigation channel will be disturbed by dredging and disposal operations. The Corps has assessed potential impacts from channel maintenance operations and determined that they will generally be localized to previously-disturbed areas, short in duration, and minor scope. Known impacts of dredging and disposal operations on salmonids, forage fish, and Dungeness crabs will be reduced and/or avoided through implementation of timing restrictions, dredge type restrictions, pre-disposal trawl surveys, and compensatory mitigation. Due to these measures, impacts to these economically important resources should not be significant either individually or cumulatively.

b. Impacts on Recreational, Aesthetic and Economic Values. No significant adverse effects on recreation, aesthetics, or the economy are anticipated.

Findings. The Corps has determined that there would be no significant adverse impacts to aquatic ecosystem functions and values.

7. Appropriate and Practicable Measures To Minimize Potential Harm to the Aquatic Ecosystem

a. Impact Avoidance Measures. Potential impacts of dredging and disposal operations on juvenile salmonids will be avoided through implementation of timing restrictions. No inner harbor dredging will occur during the outmigration period, March 1 through June 14. For the protection of bull trout, a species listed as threatened under the Endangered Species Act, the Corps no longer dredges the Elliot Slough, South Aberdeen, Cow Point, and Hoquiam reaches during February 15 through July 15. This timing restriction, designated by the USFWS, is protective of bull trout's most critical life history stages in the lower portion of a watershed, juvenile downstream migration and adults returning to the estuary in poor condition after spawning.

b. Impact Minimization Measures. The number of organisms injured and killed in dredge equipment operating in Grays Harbor is reduced in two ways: timing restrictions and use of clamshell dredges, which entrain significantly fewer organisms. Clamshell dredges are currently used to remove material from inner harbor reaches of the navigation channel. Hopper dredges are used in the outer reaches of the navigation channel only during periods outside peaks in Dungeness crab abundance.

Dissolved oxygen (DO) levels will be temporarily reduced during dredging, generally on the order of 1 to 2 milligrams per liter (mg/l) from ambient levels. The Corps monitors DO

levels as the dredges operate in the inner Harbor during low flow periods. If DO levels drop below 4 mg/l, operations are suspended until conditions improve.

Trawl surveys will occur before disposal at Half Moon Bay to ensure that adverse impacts to crab and fish these species are minimized. If high crab or fish densities are found, disposal will not occur in this site.

c. Compensatory Mitigation Measures. Hopper dredges entrain and kill a substantial number of crabs, and may disrupt crab habitat through removal of food and benthic debris that provide shelter for young crabs. The Corps compensates for this impact by increasing the survival of juvenile crabs in Grays Harbor, thereby replacing adult Dungeness crabs lost to the commercial fishery. This is accomplished by placing oyster shell on intertidal mud flats. Larval crab settle in the oyster shell plots, which provide cover and food, then 2 to 3 months later leave the intertidal flat for subtidal waters at a size that can survive most predation pressures.

Findings. The Corps has determined that all appropriate and practicable measures have been taken to minimize potential harm.

8. Other Factors In the Public Interest.

a. Fish and Wildlife. The Corps has coordinated with State and Federal agencies, as well as Native American Nations, to assure careful consideration of fish and wildlife resources. The Corps has prepared a Biological Evaluation in accordance with the Endangered Species Act. The Corps will assure full compliance with the Endangered Species Act prior to project implementation.

b. Water Quality. On August 9, 2006 the Washington Department of Ecology amended a previously issued a Water Quality Certification (Order #CENWS-OD-TS-NS-12) by extending the expiration date to June 30, 2007. The Corps has requested a new order to certify compliance with State water quality standards through September 2011. The Corps will abide by the conditions of the extended Order #CENWS-OD-TS-NS-12 and future Water Quality Certifications to ensure compliance with State water quality standards.

c. Historic and Cultural Resources. Since the proposed dredging is confined to the removal of recently deposited sediments within the previously dredged channel width and depth boundaries, no submerged cultural resources will be affected by the project.

d. Activities Effecting Coastal Zones. The Corps has determined that this maintenance work is consistent to the maximum extent practicable with the approved State of Washington Shoreline Management Program.

e. Environmental Benefits. Clean, sandy material dredged from the outer reaches will be used beneficially to maintain a stable beach profile in Half Moon Bay and to minimize shoreline erosion along South Beach.

- f. Navigation.** A minor, temporary disruption of navigation traffic may result from dredging and disposal operations. A Notice to Mariners will be issued before dredging and disposal operations are initiated. The action will maintain the channel for use by deep draft navigation vessels.

Findings. The Corps has determined that this project is within the public interest.

- 9. Conclusions.** Based on the analyses presented in project NEPA documents, as well as the following 404(b)(1) Evaluation and General Policies for the Evaluation of Permit Applications analysis, the Corps finds that this project complies with the substantive elements of Section 404 of the Clean Water Act and the Rivers and Harbors Act.

404(b)(1) Evaluation [40 CFR §230]

Potential Impacts on Physical and Chemical Characteristics (Subpart C)

1. **Substrate [230.20]** The existing surface substrate at the open water and beneficial use disposal sites consists of fine to medium sized sand grains of marine origin. Materials disposed at the direct and nearshore nourishment sites and the 3.9 mile site are of similar particle size and shape. Finer river-borne silts from the inner harbor are disposed at the South Jetty and Point Chehalis disposal sites. Bathymetric surveys indicate that most of the material placed at these sites is rapidly transported seaward along the South Jetty. Most dredged material placed at these sites, as well as material disposed at the direct and nearshore nourishment sites, will enter the longshore drift system.
2. **Suspended Particulate/Turbidity [230.21]** The discharge of dredged material at the open water and the direct and nearshore nourishment disposal sites will result in a temporary increase in turbidity and suspended particulate levels in the water column, particularly in near-bottom waters. Sand and most silts sink rapidly to the bottom, while a small percentage of finer material is expected to remain in suspension. Increases in turbidity associated with disposal operations will be minimal and of short duration.
3. **Water Quality [230.22]** No significant water quality effects are anticipated. During disposal operations, a localized turbidity plume may persist for a short period during the descent of dredged material through the water column. A minor reduction in dissolved oxygen may be associated with this plume, primarily during disposal of silty inner harbor sediments. Since disposal operations consist of a series of instantaneous, discrete discharges over the dredging schedule, any water quality impacts should be short lived and localized. All of the sediments have been tested and approved for open water disposal under the guidelines of the Dredged Material Management Program (DMMP) administered by the Corps, Environmental Protection Agency (EPA), Washington Department of Ecology (Ecology), and Washington Department of Natural Resources (DNR). Additional sediment sampling and analysis will occur on a regular basis as specified in the *Grays Harbor/Willapa Bay Dredged Material Evaluation Procedures*.
4. **Current Patterns and Water Circulation [230.23]** The disposal of material dredged from the Grays Harbor navigation channel will not obstruct flow, change the direction or velocity of water flow/circulation, or otherwise change the dimensions of the receiving water body. Most dredged material placed at the disposal sites will enter the longshore drift system or continue seaward and be deposited in the deep water past the bar.
5. **Normal Water Fluctuations [230.24]** The disposal of material dredged from the Grays Harbor navigation channel will not impede normal tidal fluctuations. South Jetty and Pt. Chehalis are dispersive disposal sites, meaning that rapid seaward erosion of disposed material occurs. While material disposed at the Southwest site tends to mound, this site is in deep enough water (–100 and –120' MLLW) that currents and tidal flows will not be affected.

6. **Salinity Gradients [230.25]** The disposal of material dredged from the Grays Harbor navigation channel will not divert or restrict tidal flows.

Potential Impacts On Biological Characteristics of the Aquatic Ecosystem (Subpart D)

1. **Threatened and Endangered Species [230.30]** Pursuant with Section 7 of the Endangered Species Act, the Corps prepared a Programmatic Biological Evaluation to assess potential impacts of the proposed work on species protected under the Act. This document concluded that Grays Harbor maintenance dredging was not likely to adversely affect the bull trout (*Salvelinus confluentus*), Western snowy plover (*Charadrius alexandrius nivosus*), brown pelican (*Pelecanus occidentalis*), marbled murrelet (*Brachyramphus marmoratus*), bald eagle (*Haliaeetus leucocephalus*), Southern Resident Killer Whale (*Orcinus orca*), Southern Green Sturgeon (*Acipenser medirostris*), Steller sea lion (*Eumetopias jubatus*), and humpback whale (*Megaptera novaeangliae*) and would have no effect on the blue whale (*Balaenoptera musculus*), fin whale (*Balaenoptera physalus*), Sei whale (*Balaenoptera borealis*), sperm whale (*Physeter macrocephalus*), leatherback sea turtle (*Dermochelys coriacea*), loggerhead sea turtle (*Caretta caretta*), green sea turtle (*Chelonia mydas*), and olive ridley sea turtle (*Lepidochelys olivacea*).
2. **Aquatic Food Web [230.31]** Turbidity associated with disposal operations may interfere with feeding and respiratory mechanisms of benthic, epibenthic, and planktonic invertebrates. Some sessile invertebrates in the navigation channel will suffer mortality from disposal operations. Species characteristic of these sites are opportunistic species, often small, tube-dwelling, surface-deposit feeders that exhibit patchy distribution patterns in space and time. Several studies have found that benthic infauna recolonize disposal sites quickly, but that they may never reach mature equilibrium benthic communities. More mobile epibenthic organisms are expected to escape the immediate impact area without significant injury. The results of testing conducted in accordance with *Grays Harbor/Willapa Bay Dredged Material Evaluation Procedures* has demonstrated that populations of fish, crustaceans, mollusks, or other food web organisms will not be significantly impacted by exposure to chemical contaminants. Potential impacts of dredging and disposal operations on salmonids, forage fish, and Dungeness crabs will be reduced and/or avoided through implementation of timing restrictions, dredge type restrictions, and pre-disposal trawl surveys. In addition, entrainment impacts to Dungeness crab are being mitigated in accordance with the interagency crab mitigation strategy agreements.
3. **Wildlife [230.32]** Noise associated with disposal operations may have an effect on bird and marine mammals in the project vicinity. The impacts of any sound disturbance would likely result in displacement of animals rather than injury. Increases in turbidity associated with dredged material disposal could reduce visibility in the immediate vicinity of disposal activities, thereby reducing foraging success for any animals in the area. Any reduction in availability of food would be highly localized and would subside rapidly upon completion of the dredging and disposal operations. Disposal operations are not expected to result in a

long-term reduction in the abundance and distribution of prey items. No breeding or nesting areas will be directly impacted.

Potential Impacts to Special Aquatic Sites (Subpart E)

1. **Sanctuaries and Refuges [230.40]** The proposed project will not adversely impact any designated sanctuary or refuge area. Bowerman Basin, a wildlife refuge operated by the U.S. Fish and Wildlife Service; two State of Washington Wildlife Recreation areas, Oyhut and Johns River; and three Washington Department of Natural Resources (DNR) Natural Area Preserves (NAP), Sand Island, Goose Island, North Bay, and Chehalis River Surge Plain are located in Grays Harbor but are not in close proximity to the disposal or dredging sites. No impact on these areas is expected to result from the proposed dredging and disposal operations. One DNR NAP, Whitcomb Flats, is located near the South Reach of the navigation channel. Maintenance dredging is not expected to have more than a negligible impact on this NAP (see Section 9.4 of the Final EA).
2. **Wetlands [230.41]** Dredged material will not be discharged in wetland areas. Use of the designated disposal sites will not alter the inundation patterns of wetlands in the project vicinity.
3. **Mudflats [230.42]** Dredged material will not be discharged in mudflat areas. Use of these designated disposal sites will not alter the inundation patterns of nearby mudflats.
4. **Vegetated Shallows [230.43]** Dredged material will not be discharged onto or directly adjacent to vegetated shallows. Under some tidal and weather conditions, a disposal plume of fine sediment fractions may travel over vegetated shallows in North Bay. Such an increase is likely not measurable compared to the relative contribution of suspended sediments from the Humptulips Basin.
5. **Coral Reefs [230.44]** Not applicable.
6. **Riffle and Pool Complexes [230.45]** Not applicable.

Potential Effects on Human Use Characteristics (Subpart F)

1. **Municipal and Private Water Supplies [230.50]** Not applicable.
2. **Recreational and Commercial Fisheries [230.51]** Commercial and sport fishing grounds are located near the disposal sites. Channel maintenance work is timed to avoid fishing seasons in the dredging and disposal areas, as well as critical migration periods for salmonids. In addition, prior to disposal at Half Moon Bay the Corps will perform trawl surveys. If Dungeness crabs densities exceed levels set by WDFW, disposal will not occur. Oysters are raised commercially on portions of Whitcomb Flats, approximately 3 miles east of the disposal areas. Annual maintenance operations are not expected to impact these oyster farms.

3. **Water-related Recreation [230.52]** Water-related recreation would be positively impacted by direct beach and nearshore disposal at Half Moon Bay. Nourishment of the Half Moon Bay beach changes the areal extent of the various elevation ranges in the bay, with an increase in the shallower profiles. Nourishment will cause waves to shoal further from the beach, providing a higher quality wave for surfers as waves will break smoother and over a longer distance. Area available for beach combing and walking will be maintained by this beneficial use disposal.
4. **Aesthetics [230.53]** Disposal operations will not change the appearance of the project area. Localized, temporary increases in noise and turbidity will occur while equipment is operating, but are not expected to be significant.
5. **Parks, National and Historic Monuments, National Seashores, Wilderness Areas, Research Sites, and Similar Preserves [230.54]** Westhaven State park is located adjacent to the Half Moon Bay and South Beach disposal sites. Disposal of clean sands at these sites will slow erosion in the areas, which is considered a beneficial effect. Bowerman Basin, a wildlife refuge operated by the U.S. Fish and Wildlife Service and two State of Washington Wildlife Recreation areas, Oyhut and Johns River, are located in Grays Harbor but are not in close proximity to the disposal or dredging sites. No impact on these areas is expected as a result from the proposed dredging and disposal operations.

Evaluation and Testing (Subpart G)

1. **General Evaluation of Dredged or Fill Material [230.60]** The material to be dredged is predominantly sand, silty sand, and sandy silt. Coarse-grained sands found in the Bar, Entrance, and South reaches meet the no-test guidelines for high-energy areas under the Marine Protection, Research, and Sanctuaries Act. The siltier materials of the inner harbor are in closer proximity to contaminant sources, so numerous tests have been performed on these sediments over the years.
2. **Chemical, Biological, and Physical Evaluation and Testing [230.61]** The results of testing conducted in accordance with *Grays Harbor/Willapa Bay Dredged Material Evaluation Procedures* has demonstrated that levels of compounds of concern present in samples taken from the navigation channel were either below qualification limits or were below levels at which demonstrable effects occur. Bioassays using appropriately sensitive species (e.g., solid phase acute toxicity testing using amphipods, elutriate testing using bivalve larvae) have been conducted, and the results indicate that sediments are not significantly toxic. Two rounds of sampling and sediment characterization have occurred since preparation of the last programmatic 404(b)(1) analysis in 2001. In June 2002, 600,000 cubic yards material from the Inner Crossover to Hoquiam Reaches was sampled, then analyzed and determined to be suitable for open water disposal. The most recent sampling took place in June 2004, and resulted in the characterization of approximately 900,000 cubic yards of sediment from the Cow Point, Aberdeen, and South Aberdeen Reaches. All data supported the finding that proposed dredged material is suitable for open-water disposal.

Action to Minimize Adverse Effects (Subpart H)

- 1. Actions Concerning the Location of the Discharge [230.70]** The effects of the discharge will be minimized by the choice of disposal sites. The disposal sites have been used previously for dredged material discharge. The discharge will not disrupt tidal flows. With the exception of the Point Chehalis and South Jetty dispersive sites, the substrate of the disposal area is similar to that being discharged. The location and timing of the proposed discharge has been planned to minimize smothering of organisms.
- 2. Actions Concerning the Material to be Discharged [230.71]** Since concentrations of chemicals of concern in the materials to be discharged are low, no treatment substances nor chemical flocculants will be added before disposal. The potency and availability of any pollutants present in the dredged material should be maintained.
- 3. Actions Controlling the Material after Discharge [230.72]** Since the dredged materials have been approved for non-confined open water disposal by an inter-agency Dredged Material Management Program, no containment levees or capping is necessary.
- 4. Actions Affecting the Method of Dispersion [230.73]** The disposal sites have been selected to make use of currents and circulation patterns to disperse the discharge. At the beneficial use sites, material will be distributed widely in a thin layer to maintain natural substrate contours.
- 5. Actions Related to Technology [270.74]** Appropriate machinery and methods of transport of the material for discharge will be employed. All machinery will be properly maintained and operated.
- 6. Actions Affecting Plant and Animal Populations [270.75]** The timing of the proposed dredging and discharge operations will minimize the potential for adverse effects to animal populations, particularly Dungeness crabs. During certain portions of the year, pre-disposal surveys will be conducted at Half Moon Bay to ensure that significant impacts to fish and Dungeness crabs are avoided.
- 7. Actions Affecting Human Use [230.76]** The discharge will not result in damage to aesthetically pleasing features of the aquatic landscape. The discharge will not increase incompatible human activity in remote fish and wildlife areas.
- 8. Other Actions [230.77]** Not applicable.

General Policies for the Evaluation of Permit Applications [33 CFR §320.4]

- 1. Public Interest Review [320.4(a)]** The Corps finds these actions to be in compliance with the 404(b)(1) guidelines and not contrary to the public interest.
- 2. Effects on Wetlands [320.4(b)]** No wetlands will be altered by the channel dredging and disposal operations.
- 3. Fish and Wildlife [320.4(c)]** U.S. Fish and Wildlife Service and the National Marine Fisheries Service were consulted to ensure that direct or indirect loss and damage to fish and wildlife resources attributable to dredging and disposal operations will be minimized.
- 4. Water Quality [320.4(d)]** The Corps will abide by the conditions of the Section 401 Water Quality Certification issued by the Department of Ecology to ensure compliance with Washington water quality standards. Dissolved oxygen (DO) concentrations in the inner harbor will be monitored during Chehalis River low flow periods, and dredging will cease if DO levels fall below levels defined by Ecology in the Water Quality Certification.
- 5. Historic, Cultural, Scenic, and Recreational Values [320.4(e)]** No wild and scenic rivers, historic properties, National Landmarks, National Rivers, National Wilderness Areas, National Seashores, National Recreation Areas, National Lakeshores, National Parks, National Monuments, estuarine and marine sanctuaries, or archeological resources will be adversely impacted by dredging and disposal operations.
- 6. Effects on Limits of the Territorial Sea [320.4(f)]** Dredging and disposal operations will not alter the coast line nor base line from which the territorial sea is measured for the purposes of the Submerged Lands Act and international law.
- 7. Consideration of Property Ownership [320.4(g)]** Not applicable.
- 8. Activities Affecting Coastal Zones [320.4(h)]** The proposed work complies with the policies, general conditions, and general activities specified in the Grays Harbor County Shoreline Management Master Plan, the City of Westport Shoreline Management Master Plan, and the Grays Harbor Estuary Management Plan.
- 9. Activities in Marine Sanctuaries [320.4(i)]** Not applicable.
- 10. Other Federal, State, or Local Requirements [320.4(j)]**
 - a. National Environmental Policy Act.** An Environmental Assessment (EA), tiered from past Environmental Impact Statements, has been prepared to satisfy the documentation requirements of NEPA.
 - b. Endangered Species Act.** In accordance with Section 7(a)(2) of the Endangered Species Act of 1973, as amended, federally funded, constructed, permitted, or licensed projects must take into consideration impacts to federally listed or proposed threatened or

endangered species. A Programmatic Biological Evaluation (PBE) was submitted to USFWS and NMFS on August 9, 2006. The Corps received letters from NMFS concurring with the determinations made in the PBE on October 2, 2006. The Corps received a letter from USFWS concurring with a previously submitted PBE on May 3, 2006. This one-year approval is valid for inner harbor dredging during fall 2006. A new concurrence letter will be required for any dredging occurring during and after May 2007.

c. Clean Water Act. The Corps must demonstrate compliance with the substantive requirements of the Clean Water Act. This document records the Corps' evaluation and findings regarding this project pursuant to Section 404 of the Act. Public Notice CENWS-OD-TS-NS-25 (July 28, 2006) served as an application for a Section 401 Water Quality Certification from the Washington Department of Ecology. On August 9, 2006 Ecology amended a previously issued a Water Quality Certification (Order #CENWS-OD-TS-NS-12) by extending the expiration date to June 30, 2007. The Corps has requested a new order to certify compliance with State water quality standards through September 2011. The Corps will abide by the conditions of the extended Order #CENWS-OD-TS-NS-12 and future Water Quality Certifications to ensure compliance with State water quality standards. The Corps will abide by the conditions of all State-issued Water Quality Certifications to ensure compliance with State water quality standards.

d. Coastal Zone Management Act. The Coastal Zone Management Act of 1972, as amended, requires Federal agencies to carry out their activities in a manner which is consistent to the maximum extent practicable with the enforceable policies of the approved Washington Coastal Zone Management Program. The Corps has prepared a Coastal Zone Management Act Consistency Determination for the navigation channel maintenance program. This evaluation established that the proposed work complies with the policies, general conditions, and general activities specified in the Grays Harbor County Shoreline Management Master Plan, the City of Westport Shoreline Management Master Plan, and the Grays Harbor Estuary Management Plan. The proposed action is thus considered consistent to the maximum extent practicable with the State of Washington Shoreline Management Program.

e. Marine Protection, Research, and Sanctuaries Act. Section 102 of the Marine Protection, Research, and Sanctuaries Act (MPRSA) authorizes the Environmental Protection Agency (EPA) to promulgate ocean dumping criteria and designate recommended ocean disposal sites. The Southwest (3.9) site has been designated as an ocean disposal site under Section 102 of the MPRSA.

f. Rivers and Harbors Act. This document records the Corps' evaluation and findings regarding this project pursuant to the Rivers and Harbors Act.

g. National Historic Preservation Act. The National Historic Preservation Act (16 USC 470) requires that the effects of proposed actions on sites, buildings, structures, or objects included or eligible for the National Register of Historic Places must be identified and evaluated. It is the policy of the Corps (33 CFR 336.1[c][6]) that historic resources surveys should not be conducted for maintenance dredging and disposal activities proposed

within the boundaries of previously constructed navigation channels or previously used disposal areas. Since the proposed dredging is confined to the removal of recently deposited sediments within the previously dredged channel width and depth boundaries, no submerged cultural resources will be affected by the project.

h. Fish and Wildlife Coordination Act. The Fish and Wildlife Coordination Act (16 USC 470) requires that wildlife conservation receive equal consideration and be coordinated with other features of water resource development projects. This goal is accomplished through Corps funding of U.S. Fish and Wildlife Service habitat surveys evaluating the likely impacts of proposed actions, which provide the basis for recommendations for avoiding or minimizing such impacts. A Fish and Wildlife Coordination Act Report was prepared for the Navigation Improvement Project. A report is not required for maintenance work.

11. Safety of Impoundment Structures [320.4(k)] Not applicable.

12. Floodplain Management [320.4(l)] Dredging and disposal operations will not alter any floodplain areas.

13. Water Supply and Conservation [320.4(m)] Not applicable.

14. Energy Conservation and Development [320.4(n)] Not applicable.

15. Navigation [320.4(o)] Dredging and disposal operations will maintain the channel for use by deep draft navigation vessels.

16. Environmental Benefits [320.4(p)] Clean, sandy material dredged from the outer reaches will be used beneficially to maintain a stable beach profile in Half Moon Bay and to minimize shoreline erosion along South Beach.

17. Economics [320.4(q)] The economic benefits of the Grays Harbor and Chehalis River Navigation Project are important to the local community.

18. Mitigation [320.49(r)] Potential impacts of dredging and disposal operations on salmonids will be avoided through implementation of timing restrictions. For the protection of bull trout and juvenile salmon, no inner harbor dredging will occur between February 15 through July 15. The number of organisms injured and killed in dredge equipment operating in Grays Harbor will be reduced through timing restrictions and the use of clamshell dredges, which entrain significantly fewer organisms. The Corps compensates for Dungeness crab impacts by increasing the survival of juvenile crabs in Grays Harbor, thereby replacing adult Dungeness crabs lost to the commercial fishery. The Corps will monitor DO levels as the dredges operate in the inner Harbor during low flow periods. If DO levels drop below 4 mg/l, operations are suspended until conditions improve.

Appendix G
Coastal Zone Consistency Determination

**Fiscal Years 2007-2011 Maintenance Dredging and Disposal
Grays Harbor and Chehalis River Navigation Project
Grays Harbor County, Washington**

Coastal Zone Management Act Consistency Determination

The Coastal Zone Management Act of 1972, as amended, requires Federal agencies to carry out their activities in a manner which is consistent to the maximum extent practicable with the enforceable policies of the approved state Coastal Zone Management (CZM) Programs. The Shoreline Management Act of 1972 (RCW 90.58) is the core of authority of Washington's CZM Program. Primary responsibility for the implementation of the SMA is assigned to local government.

The proposed action is continuation of the established Grays Harbor and Chehalis River Navigation Project maintenance dredging program. The proposed action is described in detail in the enclosed draft Environmental Assessment.

The determination of this action's consistency with the Coastal Zone Management Act is based upon review of the Washington's CZMP, *Managing Washington's Coast: Washington State's Coastal Zone Management Program* (Ecology Publication 00-06-029, February 2001); the Washington Administrative Code (WAC) Shoreline Management Act Titles; and the policies and standards of the adopted Grays Harbor County Shoreline Management Master Program, City of Westport Shoreline Management Master Program, and the Grays Harbor Estuary Management Plan. Applicable sections of each plan are presented below, with the Corps' consistency indicated in ***bold italics***.

1. GRAYS HARBOR COUNTY SHORELINE MANAGEMENT MASTER PROGRAM

Grays Harbor County implemented the SMA through the preparation of a Shoreline Master Program (SMP), adopted on June 3, 1974 (Resolution #7419) and updated on April 5, 2002. Dredging and open-water disposal of dredged materials fall under the jurisdiction of this plan. Applicable portion of this SMP are addressed below.

Chapter 2. Shoreline Management Policies, Activity Policies, 6. Dredging:

(a) Dredging should minimize damage to existing ecological values, natural resources and the river system of both the area to be dredged and the area for deposit of dredged materials and shall also minimize water quality degradation. ***Ongoing coordination with public agencies, Tribal Nations, and the public has resulted in annual maintenance dredging timing and methods that minimize ecological and environmental impacts.***

(b) Spoil deposit sites in water areas should be identified in cooperation with the State Departments of Natural Resources, Game and Fisheries. Depositing of dredge material in water

areas should be allowed only for habitat improvements, to correct problems of material distribution affecting adversely fish and shellfish resources, or where the alternative of depositing material on land is more detrimental to shoreline resources than depositing dredge material in water areas. ***The Point Chehalis and South Jetty disposal sites are Washington Department of Natural Resources (DNR) public, multi-user unconfined open water dredged material disposal sites. Large expanses of undeveloped lands adjacent to Grays Harbor are typically a mixture of beach-dune complex and wetlands which have important value as fish and wildlife habitat. In addition, placement of outer harbor materials in upland or wetland sites would remove sediments from the littoral cell in this already sediment-starved area. Therefore, use of such areas is not considered less environmentally damaging than open water disposal.***

(c) Dredging of bottom materials for the single purpose of obtaining fill material should be discouraged. ***The purpose of the proposed dredging is to maintain authorized channel depth.***

(d) Ship channels, turning and moorage basins should be identified and no new such areas should be prepared or used without sufficient evidence that existing channels and basins are inadequate. ***Only existing channel and turning basin areas will be dredged. No new areas will be dredged.***

(e) The use of dredge spoils for purposes other than landfill is encouraged. ***Dredged materials will not be used as landfill.***

Chapter 2. Shoreline Management Policies, Natural System Policies, 3. Estuary:

(a) Because of poor flushing action in the upper harbor during summer low flows, any necessary dredging, spoiling, and filling should be scheduled during high flow seasons. ***In order to avoid dredging during times of the year when migrating salmonids are present in the upper harbor, dredging will sometimes occur during the low-flow summer months. To prevent significant water quality impacts, the Corps monitors DO levels as the dredges operate in the upper harbor during low flow periods. If DO levels drop below 5 mg/l, dredging operations are suspended until conditions improve.***

Chapter 2. Shoreline Management Policies, Natural System Policies, 8. General:

Excavation, including dredging of channels and marinas, removal of sand or gravel for construction of roads or fills, excavation of drainage ditches and grading should be controlled to minimize removal of vegetation and cemented surface soil layers; release of sediment into water; removal of fertile soils, deepening of water where this would have adverse impacts on habitat; breaking the seal of an aquifer; change or blockage of current; smothering of underwater habitat; reduction of tidal flushing action or reduction of water depth where this would be adverse to production of desirable plant and animal life, or would stimulate undesirable forms; undesirable changes in shoreline configuration; reduction of floodwater capacity of a riverine floodplain; elimination of fertile marsh habitat or creation of navigational hazards. ***No vegetation will be removed during maintenance dredging and disposal operations, as only existing channel and disposal areas will be disturbed. Dredging and disposal operations will result in temporary, localized increases in turbidity; however, timing restrictions will minimize the potential for impacts to commercially important species. The proposed work will***

modify only the existing navigation channel, so baseline habitat, current, and tidal flushing conditions will be maintained. Direct beach and nearshore nourishment disposal will not result in undesirable changes in shoreline configuration. No marsh habitat will be impacted by this maintenance work. Navigational hazards will be reduced by the proposed project.

Chapter 2. Shoreline Management Policies, Amenity Policies, 3. Archeological Areas and Historic Sites:

(a) Where possible local government should consult professional archeologists to identify areas containing potentially valuable archaeological data, and to establish procedures for salvaging the data. *Professional archaeologists were utilized during the planning phases of the Grays Harbor navigation improvement project. Literature reviews and side-scan sonar investigations of channel dredging and disposal sites located no cultural resources in the project footprint.*

(d) The National Historic Preservation Act of 1966 and Chapter 43.51 RCW are hereby adopted as policies of this Master Program and their administration and enforcement is encouraged. *The Corps has determined that the proposed work complies with the National Historic Preservation Act. Since the proposed dredging is confined to the removal of recently deposited sediments within the previously dredged channel width and depth boundaries, no submerged cultural resources will be affected by the project.*

Chapter 4. Shoreline Environment Designation Map, Activity Policies, 2. Channel Strip:

The Urban Strip running through the Harbor is intended to follow existing channel lines. The purpose is to allow channel dredging and maintenance. *The navigation channel is designated as an Urban Environment area, and dredging is a permitted use (see also Chapter 20, Urban Environment Regulations).*

Chapter 22. Conservancy Environment Regulations, 3. Conditional Uses:

These and other unlisted uses may be allowed subject to the provisions of Chapter 33. *The Pt. Chehalis, South Jetty, and Half Moon Bay nearshore disposal sites are located within areas designated as Conservancy Environment. Dredged material disposal is not listed as an approved or conditional use in the Conservancy Environment. A Chapter 33 is not present in the 2002 plan update, or in the original 1974 plan.*

2. WESTPORT SHORELINE MANAGEMENT MASTER PROGRAM

The City of Westport implemented the SMA through preparation of a SMP (Title 17- Westport Zoning Ordinance, Chapter 17.32), adopted April 28, 1998. The Half Moon Bay nearshore and direct beach disposal sites and the South Beach disposal site fall under the jurisdiction of this plan.

The beach along Half Moon Bay is designated as Urban Shoreline (Recreation and Parks use Zone). The South Beach disposal site falls with the Conservancy Shoreline Environment. Landfill, defined as replacement of shoreland areas removed by wave action or the normal erosive processes of nature, is a conditional use on an urban shoreline [17.32.050 (1)(F)].

Bankline erosion control, shoreline protective structures, and landfills are conditional uses in the Conservancy environment [17.32.050(2)(F)].

Relevant landfill guidelines [17.32.055 (8)(D)] includes:

1. Shoreline fills or cuts should be designed and located so that significant damage to existing ecological values or natural resources, or alteration of local currents will not occur, creating a hazard to adjacent life, property, and natural resources systems. ***Adverse impacts on salmonids, forage fish, and Dungeness crabs associated with disposal at the Half Moon Bay site will be reduced and/or avoided through implementation of timing restrictions and pre-disposal trawl surveys. The Corps will avoid disposal at the direct beach and nearshore sites during times of the year when the disposal sites are extensively used by these species. Pre-disposal monitoring will be performed prior to disposal at Half Moon Bay, in coordination with WDFW, and if maximum allowable crab densities are reached disposal will not occur.***
2. All perimeters of fills should be provided with vegetation, retaining walls, or other mechanisms for erosion prevention. ***The sands placed on the beach will be erodable by design. The erosion of this material will maintain a stable beach profile thereby maintaining fish and wildlife habitat in Half Moon Bay.***
3. Fill materials should be of such quality that it will not cause problems of water quality. Shoreline areas are not to be considered for sanitary landfills or the disposal of solid waste. ***The origin of materials disposed at the nearshore and direct beach nourishment sites is the outer reached of the navigation channel. Erosion of these clean sands will mimic natural erosion processes and will not degrade water quality.***
4. Priority should be given to landfills for water-dependent uses and for public uses. In evaluating fill projects and in designating areas appropriate for fill, such factors as total water surface reduction, navigation restriction, impediment to water flow and circulation, reduction of water quality, and destruction of habitat should be considered. ***Direct beach nourishment will not degrade recreational use of Half Moon Bay nor limit public access to the beach. The purpose of beach nourishment at this site is to keep the revetment extension buried under sand cover, while maintaining a stable, gently sloping adjacent beach. Water related activities in Half Moon Bay are not expected to be degraded as a result beach nourishment.***

Dredging is discussed in section 17.32.055 (8)(E):

2. Use of dredge spoils for protective areas and to restore areas of high erosion is appropriate. Depositing of dredge material in water areas should be allowed only for habitat improvement, to correct problems of material distribution adversely affecting fish and shellfish resources, or where the alternatives of depositing material on land is more detrimental to shoreline resources than depositing it in water areas. ***The South Beach and Half Moon Bay nearshore disposal sites are beneficial use sites intended to keep high-quality sands in the littoral system to ameliorate the effects of ongoing erosion along South Beach and in Half Moon Bay.***

3. GRAYS HARBOR ESTUARY MANAGEMENT PLAN

The Grays Harbor Estuary Management Plan (GHEMP) is a coordinated regional comprehensive plan designed to guide land and water use activities in the Grays Harbor estuary and the surrounding shoreline. It was approved in January 1986 and is implemented through the Grays Harbor County Shoreline Master Program, the Master Programs of local jurisdictions, and the State Shoreline Management Act. Dredging, open water disposal, and direct/nearshore nourishment at Half Moon Bay are under jurisdiction of the GHEMP.

The Federal navigation channel, open water disposal sites, and the Half Moon Bay nearshore nourishment disposal site are located in Management Unit 44, a special unit that included all the water area not included within any other designated management unit. The management objective for the Unit 44 Planning Area is to protect areas for purposes that directly use or depend on natural systems (p. 112). Activities which occur in these areas should be compatible with natural systems in order to maintain the carrying capacity and biological productivity of the bay. Special conditions are imposed on Unit 44 to ensure that activities are carried out in a manner which does not reduce or degrade these estuarine resources.

Relevant Special Conditions are:

1. Activities in Unit 44 will be compatible with the natural system. For example, areas of significant fish and wildlife habitat will be managed to ensure continued biological productivity. Where consistent with resource capabilities, high-intensity water-dependent recreation, dredging, and other water-dependent uses will be allowed. Thus, those uses that depend on the water area (e.g., shipping and fishing) and the activities that support those uses (maintenance dredging, navigation aids, etc.) are considered appropriate to the Management Unit. ***Maintenance dredging is considered an appropriate use in this special management unit.***

8. EPA authorized in-water dredged material disposal sites are allowable in this management unit consistent with meeting all designation criteria. ***The Point Chehalis and South Jetty disposal sites are Washington Department of Natural Resources (DNR) public, multi-user unconfined open water dredged material disposal sites.***

The Half Moon Bay direct beach nourishment disposal site is located in Management Unit 40, which is an area designated as Conservancy Managed. Unit 40 is intended for public recreational uses (p. 108). ***Direct beach nourishment will not degrade recreational use of Half Moon Bay nor limit public access to the beach. The purpose of beach nourishment at this site is to keep the revetment extension buried under sand cover, while maintaining a stable, gently sloping adjacent beach. Water related activities in Half Moon Bay are not expected to be degraded as a result beach nourishment.***

Bankline erosion control, defined as a type of fill designed to preserve the existing bankline or to protect the bankline from erosion (page 15), is an allowable use in Management Unit 40.

Relevant general policies for bankline erosion control (p. 24) include:

1. Materials to be used shall be of non-erodible quality that will allow long term stability and minimize maintenance. Some erodible materials may be used when it can be demonstrated that fish and wildlife uses will be enhanced. ***The sands placed on the beach will be erodible by***

design. The erosion of this material will maintain a stable beach profile thereby maintaining fish and wildlife habitat in Half Moon Bay.

2. Riprap/bank stabilization procedures shall be confined to those areas where active erosion is occurring or new development or redevelopment requires protection from maintaining the integrity of upland structures or facilities. ***Material will be placed in this area only when the protective stockpile of sandy material fronting the revetment is depleted.***

3. Only clean materials may be used. Materials which could create water quality problems or which will rapidly deteriorate are not permitted. ***Only clean oceanic sands will be placed on the beach. Erosion of this material will mimic natural erosion processes and will not degrade water quality.***

4. Minor modifications of the bankline may be allowed on a case-by-case basis. These alterations shall be for the purpose of stabilizing the bankline, not for the purpose of developing new upland areas. ***Sands will be placed to maintain the current shoreline configuration.***

5. Under no circumstances shall bankline erosion control be initiated for the purpose of gaining developable uplands from existing water areas. ***The purpose of this work is to ensure that the armor stone toe of the Point Chehalis revetment is not exposed.***

6. All projects shall be constructed in a manner to minimize turbidity in adjacent waters. ***A temporary, localized increase in turbidity will result from disposal of dredged materials at Half Moon Bay. However, disposal at this site has been designed in a manner that will reduce and/or avoid the potential for adverse impacts on salmonids, forage fish, and Dungeness crabs. Implementation of timing restrictions and pre-disposal trawl surveys will enable the Corps to avoid disposal during times of the year when Half Moon Bay is used extensively by these species.***

9. The outer slope of the bankline after completion of the erosion control will not exceed a slope of 2:1. ***The purpose of nearshore and direct beach nourishment in Half Moon Bay is to maintain the current beach profile (approximately 60H:1V).***

10. Use of vegetation for bankline stability is required where technically applicable and should be in conjunction with structural forms of erosion control. Vegetation shall be self-sustaining and soil stabilizing and compatible with natural shoreline vegetation. ***The sands placed on the beach will be erodable by design. The erosion of this material will maintain a stable beach profile thereby maintaining fish and wildlife habitat in Half Moon Bay.***

4. OTHER WASHINGTON CZMP ENFORCEABLE POLICIES

State Environmental Policy Act

The Corps has prepared the attached draft environmental assessment pursuant to the National Environmental Policy Act and determined that continuation of the maintenance program will not have a significant adverse impact on the natural or human environments.

Ocean Resources Management Act

The purpose of the Ocean Resources Management Act (ORMA) is to articulate policies and establish guidelines for the exercise of state and local management authority over Washington's coastal waters, seabed, and shorelines (Chapter 43.143 RCW). ORMA applies to the Pacific Ocean, beginning at the mean high tide line and running seaward for 200 miles. Two dredged material disposal sites—South Beach Nearshore and Southwest (3.9 Mile)—and a portion of the navigation channel are located within this geographical area.

WAC 173-26-360 provides guidelines and policies for the management of ocean uses. Dredging and dredged material disposal is an “ocean use” activity to be reviewed in accordance with ORMA criteria. Applicable portions of the implementing regulations are provided below, with the Corps’ consistency indicated in ***bold italics***.

Permit Criteria [WAC 173-26-360(6)]

(a) There is a demonstrated significant local, state, or national need for the proposed use or activity; ***The Grays Harbor navigation channel provides shipping access between the Pacific Ocean and Cosmopolis on the Chehalis River. The Corps has determined there is a federal interest in maintaining this deep-draft channel annually.***

(b) There is no reasonable alternative to meet the public need for the proposed use or activity; ***Without annual maintenance dredging, shoaling would reduce the ability of larger ships to enter and leave harbor safely under full load or low tide conditions, thereby impacting the operation of the Port of Grays Harbor and the economy of Grays Harbor county. There are no upland disposal sites available for the large quantity of material removed from the channel, so deep-water and nearshore beneficial use sites are the least environmentally damaging alternatives.***

(c) There will be no likely long-term significant adverse impacts to coastal or marine resources or uses; ***Unavoidable adverse effects of the maintenance dredging program include: (1) temporary, localized disruption of navigation by operating dredged and disposal barges; (2) temporary, localized disturbance of fish and wildlife in the vicinity of dredging and disposal operation; (3) temporary, localized water quality degradation associated with turbidity plumes; and (4) mortality of sessile benthic invertebrates and some mobile invertebrates and fish in the path of the dredges and in disposal sites. Adverse impacts associated with maintenance dredging are avoided, minimized, and compensated for via several mitigation measures incorporated into the program (see below).***

(d) All reasonable steps are taken to avoid and minimize adverse environmental impacts, with special protection provided for the marine life and resources of the Columbia River, Willapa Bay and Grays Harbor estuaries, and Olympic National Park; ***During the formulation of the existing maintenance dredging program, much care was taken to reduce environmental impacts. Several impact avoidance, minimization, and compensation measures have been incorporated into the maintenance program, including: (1) To avoid impacts to bull trout and out-migrating juvenile salmon, the Corps does not dredge the South Aberdeen Reach, Cow Point Reach, Hoquiam Reach, and turning basins between February 15 and July 15; (2) To reduce***

entrainment of fish, shrimp, and crabs, the inner harbor reaches are dredged using a clamshell dredge; (3) To reduce entrainment of Dungeness crabs, no hopper dredging occurs in outer harbor reaches during periods of peak crab abundance; (4) Water quality monitoring occurs during inner harbor dredging during low flow periods; (5) To avoid significant impacts to Dungeness crab and marine fishes, trawl surveys occur in the Half Moon Bay Nearshore Disposal Site prior to any disposal activities; (6) Disposal at the Half Moon Bay nearshore disposal site and the South Beach disposal site is coordinated with commercial crab fisherman to minimize disruption to their harvest activities; and (7) To compensate for the loss of Dungeness crabs to the commercial fishery, the Corps places oyster shell on intertidal mudflats in order to improve survival rates for young-of-the-year crabs.

(e) All reasonable steps are taken to avoid and minimize adverse social and economic impacts, including impacts on aquaculture, recreation, tourism, navigation, air quality, and recreational, commercial, and tribal fishing; *The purpose of the maintenance program is to maintain navigation in the Harbor. Several mitigation measures are employed to reduce dredging impacts to the Dungeness crab fishery, including equipment/timing restrictions and a compensatory mitigation program (see below).*

(f) Compensation is provided to mitigate adverse impacts to coastal resources or uses; *The Corps has implemented a program to replace adult Dungeness crabs lost to the commercial fishery by increasing the survival of juvenile crabs. Shortly after construction of the navigation improvement project in 1990, the Corps began placing oyster shell on tidal flats to enhance the survival of young Dungeness crabs following their metamorphosis from planktonic stages. Larval crab settle in the oyster shell plots, which provide cover and food, then 2 to 3 months later leave the intertidal flat for subtidal waters at a size that can survive most predation pressures. Please see the enclosed Draft Environmental Assessment for more information on this mitigation program.*

(g) Plans and sufficient performance bonding are provided to ensure that the site will be rehabilitated after the use or activity is completed; and *Not applicable, as channel maintenance is ongoing.*

(h) The use or activity complies with all applicable local, state, and federal laws and regulations. *Please see the enclosed Draft Environmental Assessment for the status of project compliance will all applicable regulations.*

Ocean Disposal [WAC 173-26-360(11)]

(a) Storage, loading, transporting, and disposal of materials shall be done in conformance with local, state, and federal requirements for protection of the environment. *Please see the enclosed Draft Environmental Assessment for the status of project compliance will all applicable regulations.*

(b) Ocean disposal shall be allowed only in sites that have been approved by the Washington Department of Ecology, the Washington Department of Natural Resources, the United States Environmental Protection Agency, and the United States Army Corps of Engineers as appropriate. *The Southwest (3.9) site was designated as an ocean disposal site by EPA pursuant to Section 102 of the Marine Protection, Research, and Sanctuaries Act. The South*

Beach site is a beneficial use site designated by the Corps pursuant to Section 404(b)(1) of the Clean Water Act.

(c) Ocean disposal sites should be located and designed to prevent, avoid, and minimize adverse impacts on environmentally critical and sensitive habitats, coastal resources and uses, or loss of opportunities for mineral resource development. Ocean disposal sites for which the primary purpose is habitat enhancement may be located in a wider variety of habitats, but the general intent of the guidelines should still be met. ***Studies evaluating the impacts of alternate disposal sites were conducted as part of the designation processes described in Section (b) above.***

Clean Water Act

The Corps issued a Public Notice for continuation of the maintenance program on July 28, 2006 (Notice CENWS-OD-TS-NS-25). This notice and the attached Joint Aquatic Resources Permit Application Form (JARPA) serve as an application for a 401 Water Quality Certification from Ecology. Since the Corps does not issue itself 404 permits, we will prepare a 404(b)(1) evaluation and public interest review to satisfy the substantive requirements of Section 404 of the Act.

Clean Air Act

The proposed project does not involve a new regulated source requiring an air operating permit, and the project site is not located in a non-attainment area. Maintenance dredging and disposal activities are specifically excluded from Clean Air Act conformity determination requirements because they are expected to result in no emissions increase or an increase in emissions that is clearly *de minimis* [40 CFR 51.853 (c)(1)(ix)].

Washington State Energy Facility Site Evaluation Council

Not applicable.

5. CONCLUSION

Based on the preceding evaluation, the Corps has determined that the proposed project complies with the policies, general conditions, and general activities specified in the Grays Harbor County SMP, City of Westport SMP, and the Grays Harbor Estuary Management Plan. The proposed action is thus considered consistent to the maximum extent practicable with the State of Washington Shoreline Management Program.